

# THE JOURNAL OF EDUCATIONAL SOCIOLOGY

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# The JOURNAL of EDUCATIONAL SOCIOLOGY

*A Magazine of Theory and Practice*

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## EDITORIAL

The Tennessee Valley regional program is an exciting experiment in social planning. Once the most luxuriant "happy hunting ground" of the Indians and now the region of lowest per capita wealth and income as Odum demonstrated; once the land of rich plantations and now an area of depleted soil, the region presents a challenge to our national economy and to our national welfare.

Under our pattern of social control, government is an agency of the people rather than their master. Under the democratic value pattern, government is given a unique role—that of leader and follower of public opinion. Since we place the responsibility for public welfare with our government, it has the responsibility of mobilizing the best of technological services and findings for the use of the people in improving their general welfare. Paternalism, however, cannot become a permanent pattern so long as the people have the authority to determine, actually, the policies, programs, and personnel of government.

Backed by coördinated research in all sciences and technologies, education can overcome the characteristic lag between best knowledge and general practice. Social planning and action in our society must be indirect—by education rather than by edict. But the education must not control the decision; it must facilitate free, able, and informed consideration.

The Tennessee Valley program is an experiment and demonstration of the educational approach to problems of national welfare—a case study of the relationships of people and their institutions in the evolving American Way. It is a guide to the roles of government, science, education, and people in the postwar reorganization period.

## THE TENNESSEE RIVER VALLEY, ITS PEOPLE, RESOURCES, AND INSTITUTIONS

WILLIAM E. COLE AND S. E. T. LUND

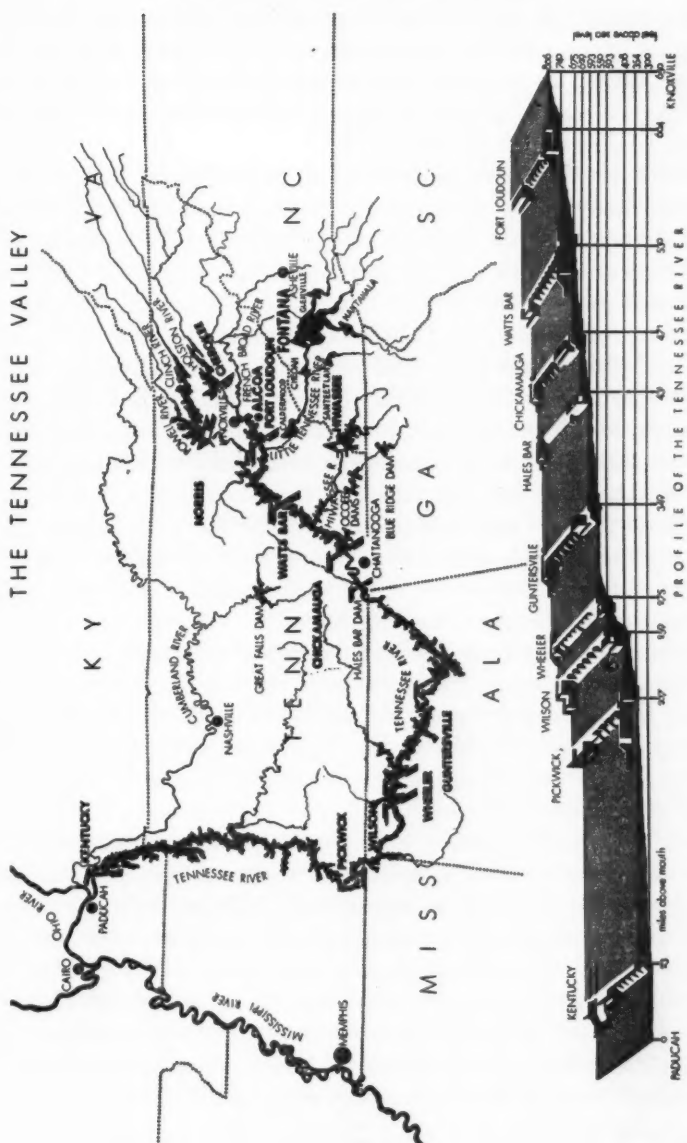
Some attempts have been made to differentiate regions on the basis of cultural similarities, other efforts have used topographical features, political alignments, soil types, or other elements "common to a people" or to an area as a basis for regional differentiation, leaving the more complicated problem of determining, for purposes of planning, the subregions of the "larger region."<sup>1</sup>

Nature has been kind to the definers of the Tennessee Valley region. Here the watershed of a great river defines the region. As a legal background for delineation of an area in which the Authority is to function, the Act<sup>2</sup> clothes the Authority with the power "to improve the navigability and to provide for the flood control of the *Tennessee River*; to provide for reforestation and the proper use of marginal lands in the Tennessee Valley; to provide for the agricultural and industrial development of said valley."

The geographical and climatic features of the region have left their stamp upon both the significance and the problems of the region. In the first place, the variety of topographical, climatic, soil, cultural, and geological features give the program of the Authority greater national significance. Here in the regional complex may be found problems of erosion, drainage, navigation, and flood control not unlike those of other river valleys of the United States. The varied agriculture of the region makes immensely significant to other agricultural sections any innovations and improvements made in grazing, dairying, livestock farming, cotton culture, corn culture, fruit growing, and the like. The thirteen million acres of woodlands in the Valley contain more than one hundred commercial species of trees which "practically cross section the tree growing eastern

<sup>1</sup> One of the most outstanding pieces of work in the determination of subregions has been done by Mr. Harold Miller of the Department of Regional Studies of the Tennessee Valley Authority.

<sup>2</sup> The original Act being Public-No. 17-73d Congress, 1st Session, H. R. 5081, May 18, 1933, 48 stat. 58.



United States."<sup>3</sup> Present also are the problems of the large plantation, operating under a one-crop system, the large diversified farm, the share cropper, the tenant and owner, the owner of the mountain "patch," and the marginal man of the hill country—all of these and more within one region, a valley some 1,000 miles long.

Within the Valley proper dwelt 2,812,886 inhabitants in 1930. When the 1940 county tabulations are completed, they are likely to show a population slightly in excess of three million. The seven Valley States had a population of 18,387,847 in 1930 and 20,151,344 in 1940. It is usually estimated that about six million people are affected directly by the program of the Authority. In 1930, 73 of the 121 counties had no urban communities and 77.6 per cent of the total population of the Valley was rural.

Reproduction rates in the Valley States are among the highest in the nation. Although net reproduction rates declined greatly between 1930 and 1940, the 1940 census data indicates Kentucky with a reproduction rate<sup>4</sup> of 125, Tennessee 107, Alabama 121, Mississippi 128, and North Carolina 117. The Valley is an area of large families. The average family in 1930 contained 4.60 persons as contrasted with the national average of 4.10 persons. The fertility rate of the Valley counties is about one third greater than that for the United States.

Within the Valley proper the racial composition is roughly 90 per cent white and 10 per cent Negro. In 1900, 15.0 per cent of the population was Negro. In 1930, this per cent had declined to 10.1. In 1900 there were 311,000 Negroes in the Valley. By 1930 this number had declined to 283,000. The Valley, of course, traverses States where numerically the Negro population is very large.

With existing folk patterns and attitudes, the biracial character of the population presents many complicated features not only in employment but also in the planning of recreational facilities, the recognition of predominant interracial problems, and the like. Since there are some 11,000,000 Negroes in the nation, whatever facilities may be established and whatever improved principles of white-Negro relationships may be worked out in the Valley should have immense national significance. The recognition of the unique problems of minority population groups presents one of the most challenging phases of regional planning.

<sup>3</sup> Tennessee Valley Authority, et al, *Forests and Human Welfare* (Washington, D. C.: Government Printing Office, 1940), p. 10.

<sup>4</sup> A rate of 100 being enough reproduction to maintain the population but without any increase.

In 1930, the 121 valley counties had a larger proportion of inhabitants under 20 years of age than the United States as a whole. It also had a smaller proportion of middle-aged persons (20 to 54) and older persons (over 55 years of age). Alexander and Cadra indicate that

"... the age composition of a population is significantly revealed by what is commonly referred to as the depending ratio, the number of persons under 20 years of age plus those 65 years old and older (dependents) per 100 persons 20 to 54 years of age (producers). While this ratio declined for each successive census year from 1900 to 1930 both in the seven valley states and in the United States, the number of dependents per 1000 persons 20-54 years of age was considerably larger in the former at each census. In fact, there were 113.6 dependents to each 100 persons 20 to 54 years of age in the seven valley states in 1930 as contrasted with 104.9 dependents per 100 persons 20 to 54 years of age in the nation as a whole in 1900. An even heavier burden of dependents for the smaller area of the Tennessee Valley (121 counties) in 1930 is shown by the dependency ratio of 121.5 as contrasted with 90.3 for the United States."<sup>6</sup>

Within the white population of the Valley, there is of course great homogeneity. Typically, the ancestors of the population were of North European origin—English, Scotch-Irish, and German. During the last thirty years immigration has affected the composition of the population but little and the element of foreign-born people in the population is inconsequential. As compared with other regions of the country, the Valley has been characterized by cultural isolation despite Civil War and postwar invasions. Sociologists look upon a homogeneous population as being one factor in slowness of cultural change. Innovations, while harder to introduce, are likely to "stick" longer than when they are adopted by a heterogeneous population. Very often, however, homogeneity of population is given as the explanation for the lack of change whereas equally important factors may be the lack of funds with which to purchase new items of an "outside culture," folk attitudes toward an "outside culture," the lack of leadership to introduce change, or the lag in education which may be paralleled with slowness in the development of new standards, new wants, or new desires. All of these factors have been affected by the TVA program.

<sup>6</sup> Tabulations on file in Tennessee Valley Technical Library, Knoxville, Tennessee.

There is some indication of ferment among the people of the Valley. In the first place they are beginning to fight back against any national legislation or condition which imposes upon them regional inequalities. They are beginning to relinquish some of their State-right attitudes under the impact of regional changes. They are beginning to question the wisdom and feasibility of highly urbanized cultures. Unionism is being rapidly accepted by Valley labor. Conservation is gaining the momentum of a new philosophy of the use of natural resources. The people are beginning to demand functionalism in church and school. Mass demands are being made to free the ballot box from the poll tax, and, with the support of a sympathetic majority, minority groups are being heard and their desires heeded. Old folk patterns and mores are being forsaken and new ones adopted.

The economic underpinning for the people of the Valley is its resources. There are its natural resources—in general a kindly climate, abundant rainfall, soils of many types, abundant woodlands, diversity of minerals, the streams, the mountains, and impounded waters.

Against the background of splendid, modern dams and controlled waterways, the very latest in engineering feats, are the customary institutional lags which are so marked when one compares institutional change with technical change.

In no institutional complex are these lags more apparent than in government. The poll tax is still present in some of the States, and the lack of adequate civil service and merit procedures in State, county, and urban governments is taking its toll of inefficiency and waste. Added to this lack of fiscal control are mounting tax rates and decreasing tax bases in many counties, and there is reason to conclude that functional regional planning is being handicapped by politics and politicians. As planning agencies complete their physical planning projects there is every reason to expect that they will center more attention upon the problems of government.

In education some changes are indicative of real gains. Coöperation between the Authority and the land-grant colleges of the region and of the



nation has been unselfish, stimulating, and genuine, and to the credit and advancement of both agencies. Coöperation between local school systems and the Authority in reservoir-affected communities has aided these communities not only to improve their instruction but to absorb the load of increased enrollment without disorganization. Consolidation in the region, especially with governmental aid, moves rapidly. At the higher education level real regional centers of higher education are being developed in Nashville, Chapel Hill, and Durham, and in Atlanta. The coöperation of the Authority in the preparation of educational materials is filling a real need in education.\*

As for library trends the most hopeful signs are the development of regional library services in connection with communities where construction is taking place. This work is the outgrowth of coöperation between the TVA, local urban libraries, and State library associations. More elaborate regional library plans exist on paper and on statute books awaiting the time when funds are made available with which to carry them to completion.

For the health of the people, in a concerted attack upon malnutrition and upon certain diseases which are distinctly southern, as malaria and hookworm, the TVA working in a coöperative relationship with State and local agencies is making genuine contributions. To the prevention of disease and deficiency, coöperative health education work between the educational institutions of the Valley, the Authority, and the health agencies merits special mention.

Toward widening the economic opportunities of the people of the Valley, the work of the Authority is making several integrated approaches as its administrative organization indicates (summarized in chart).

Finally, we should point to the work of the more than two hundred county, State, and urban planning bodies operating within the Tennessee Valley region. The work of these bodies is in general fairly well integrated with the planning activities of the Authority and perhaps, on the whole, represents the most intensive planning operations in the nation. Not all of these activities but a considerable

\* These contributions are explained in the articles that follow.



proportion of them should eventually touch directly the people, the resources, and the institutions of the Tennessee Valley.

Established patterns of social and economic organization were inadequate to meet the changing needs of a society growing in complexity. The TVA program attempts to help the people change and develop some of their basic social forms and institutions within the fundamental value pattern of democratic social organization.

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## THE APPROACH OF THE TVA TO THE SOLUTION OF REGIONAL PROBLEMS

GORDON R. CLAPP AND HOWARD K. MENHINICK

Since 1933, the work of the Tennessee Valley Authority has gone forward during a period of great change in national and regional affairs. Flowing through all its action programs are the administrative processes which determine their significance and their acceptance in the economic and political life of the region. These processes are not the result of mere chance but are the dynamic consequences

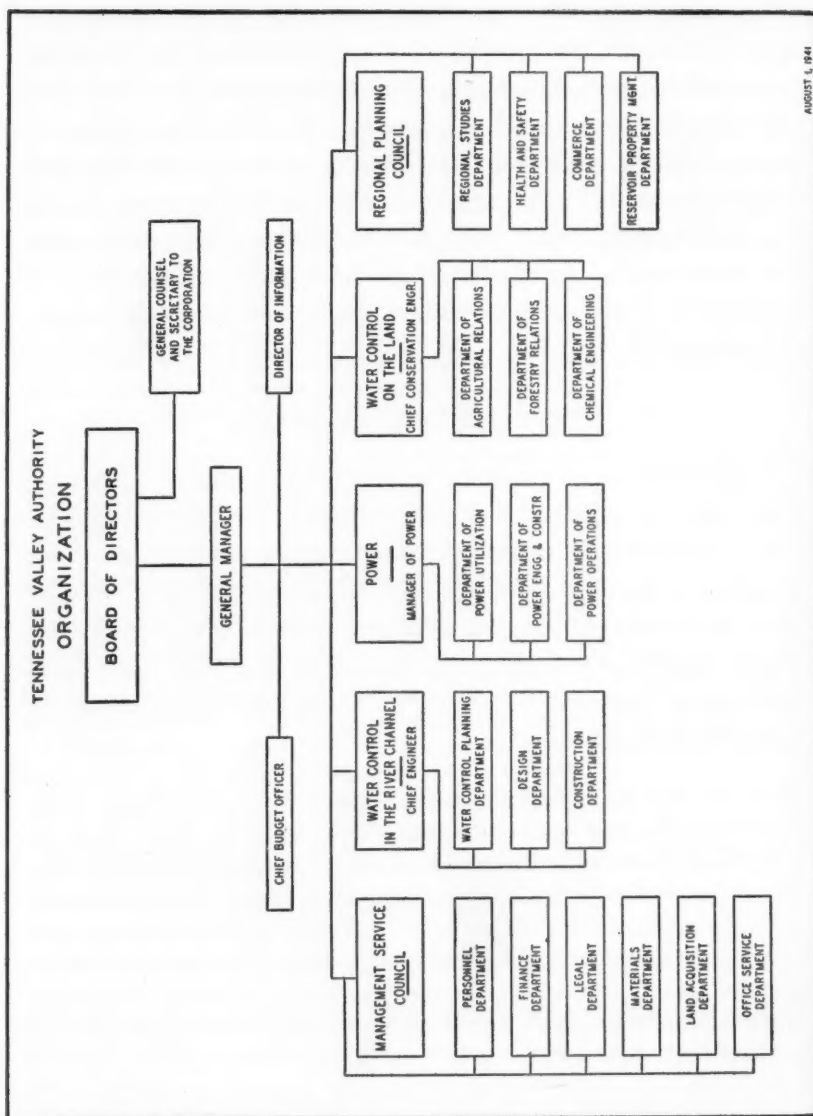
of important administrative characteristics of the Authority: the unity with which the varied problems of a watershed and its people are conceived, the decentralized administration of Federal functions and its corporate form of organization, the interrelationship between planning and action, and devices of formal and informal coöperation with State, local, and other Federal agencies in the approach to the solution of regional problems. These administrative characteristics which determine the approach of the TVA to the solution of regional problems are discussed briefly in the following paragraphs.

#### THE UNITY OF THE PROGRAM

For the first time a President and Congress created an agency for a complete development of an *entire* waterway for *all* of its principal public uses: navigation, flood control, power, national defense. And, in addition, the Authority was directed to consider these national interests as opportunities for initiating a broad program of integrated regional development through coöperation with local, State, and Federal agencies. To refer again to the President's message to Congress on April 10, 1933,

"It is clear that the Muscle Shoals development is but a small part of the potential public usefulness of the entire Tennessee River. Such use, if envisioned in its entirety, transcends mere power development; it enters the wide fields of flood control, soil erosion, afforestation, elimination from agricultural use of marginal lands, and distribution and diversification of industry. In short, this power development of war days leads logically to national planning for a complete river watershed involving many states and the future lives and welfare of millions. It touches and gives life to all forms of human concerns.

"I, therefore, suggest to the Congress legislation to create a Tennessee Valley Authority—a corporation clothed with the power of government but possessed of the flexibility and initiative of a private enterprise. It should be charged with the broadest duty of planning for the proper use,



conservation, and development of the natural resources of the Tennessee River drainage basin and its adjoining territory for the general social and economic welfare of the Nation. This authority should also be clothed with the necessary power to carry these plans into effect. Its duty should be the rehabilitation of the Muscle Shoals development and the coordination of it with the wider plan."

The approach suggested by the President and expressed in the TVA Act was a clear-cut recognition of the regional character of resource problems and the fact that they do not follow local and State political boundary lines. The conservation problems of the Great Plains, the lake States cut-over area, or the Tennessee Valley, as we now fully recognize, cut across jurisdictions of existing governmental institutions, and in varying degrees affect all parts of the regional economy, whether agriculture or manufacturing, education or public health.

This regional approach was furthermore an acknowledgment that the application of engineering and technology to the conservation and development of natural resources is not an end in itself but is a means of progressively decreasing the burdens imposed upon labor, raising the standards of living, and of widening the economic opportunities in the region. The Authority, for example, is not only authorized to sell the surplus power not used in its operations, but is directed to conduct studies and experiments to determine how this power may be used to bring about "a fuller and better balanced development of the resources of the region."<sup>1</sup> The interest of the Authority in the production of improved plant foods is not to be confined to the electric furnace but to their practical use by farmers under conditions which permit an accurate measure of the economic return which they produce.<sup>2</sup> Moreover, the manufacture and distribution of cheaper fertilizer—though in itself a help to the farmer through lowered costs—must not be permitted to stimulate the use of land for row cultivation proving destructive of another regional objective, the saving of the soil. The two objectives of better plant food and soil preservation must

<sup>1</sup> See Section 10 of the Tennessee Valley Authority Act as amended.

<sup>2</sup> See Section 5 of the Tennessee Valley Authority Act as amended.

be brought into harmony. How this harmony is actually being achieved through the voluntary coöperation of more than 33,000 farmers, of agricultural experiment station workers, and extension agents is discussed elsewhere.<sup>a</sup>

This obligation of the Authority to integrate its activities with proper regional development has resulted in the creation of values which could not have been the concern of an agency whose responsibility stopped at the riverfront or at the boundaries of any one of the aspects of the total regional problem.

Thus, contemporaneously with the engineering investigations of dam sites and reservoirs, the Authority carries on investigations of the social and economic problems involved in the location and building of a dam. Not only are these investigations considered in the placing of the dams and determining reservoir heights, but they are the basis for readjustment activities prior to the filling of the reservoirs. Giving life to the conservation policy of the Act, the dislocations and readjustments occasioned by construction activities are viewed as new opportunities rather than permanent impairments. The Authority's personnel in the various technical fields such as forestry, agriculture, health, recreation, commerce, wild life, and community planning pool their viewpoints with those of State, local, and other Federal agencies in meeting the readjustment problems in order to make the construction activities yield their maximum benefits with reference to values frequently overlooked on an ordinary construction job.

Even in the normally prosaic task of providing construction housing and other services for employees on the dams in the early stages of river development, an attempt has been made to visualize the place of these projects in the life of the region following completion of the work.

The efforts of the Authority to facilitate multiple use of its reservoir lake areas are another illustration of the results over and above the direct water-control objectives that the Authority has been able to secure as a consequence of its interests in the whole problem of regional development. The conservation of this new resource by the Authority with the coöperation of appropriate local, State, and national agencies and of private citizens has opened up an entirely new field of enjoyment and of economic opportunity in supplying facilities for recreation for hundreds of thousands of visitors from all over the country. A progressive policy of resource conservation and creation combines the values of providing a better place

<sup>a</sup> See Landess and Baker, "Education for Sustained Regional Productivity," in this issue.

in which to live and work and an attractive playground for traveling fellow Americans.

THE DECENTRALIZATION OF ADMINISTRATION

Most of us are familiar with, and the present experiences of many European and Asiatic nations sharply emphasize, the hazards of overcentralized administration of the programs of government and its corollary—the abuse or denial of the right of local self-determination. Even a century ago these hazards were clearly set forth by the French statesman and writer, De Tocqueville, in the following significant remarks:

“... Indeed, I cannot conceive that a nation can live and prosper without a powerful centralization of government. But I am of the opinion that a centralized administration is fit only to enervate the nations in which it exists, by incessantly diminishing their local spirit. Although such an administration can bring together at a given moment, on a given point, all the disposable resources of a people, it injures the renewal of those resources. It may insure a victory in the hour of strife, but it gradually relaxes the sinews of strength. It may help admirably the transient greatness of a man, but not the durable prosperity of a nation.”

Thus, of fundamental importance to the democratic realization of the objectives of a multiple-purpose regional agency is the power to make decisions in the field where the problems of the people occur and where adjustments can be realistically achieved. A flexible, decentralized administration, necessary in single-purpose programs, becomes particularly urgent when a group of interrelated functions are subject to unified administration at the scene of operations. The range of affected jurisdictions and local interests is extended, and the possibilities for voluntary coöperation are multiplied far beyond the correlation of the direct responsibilities of one to another.

What this decentralization of administration actually means in concrete, day-to-day experience can best be illustrated in the discussion of the coöperative nature of the Authority's approach to the solution of regional



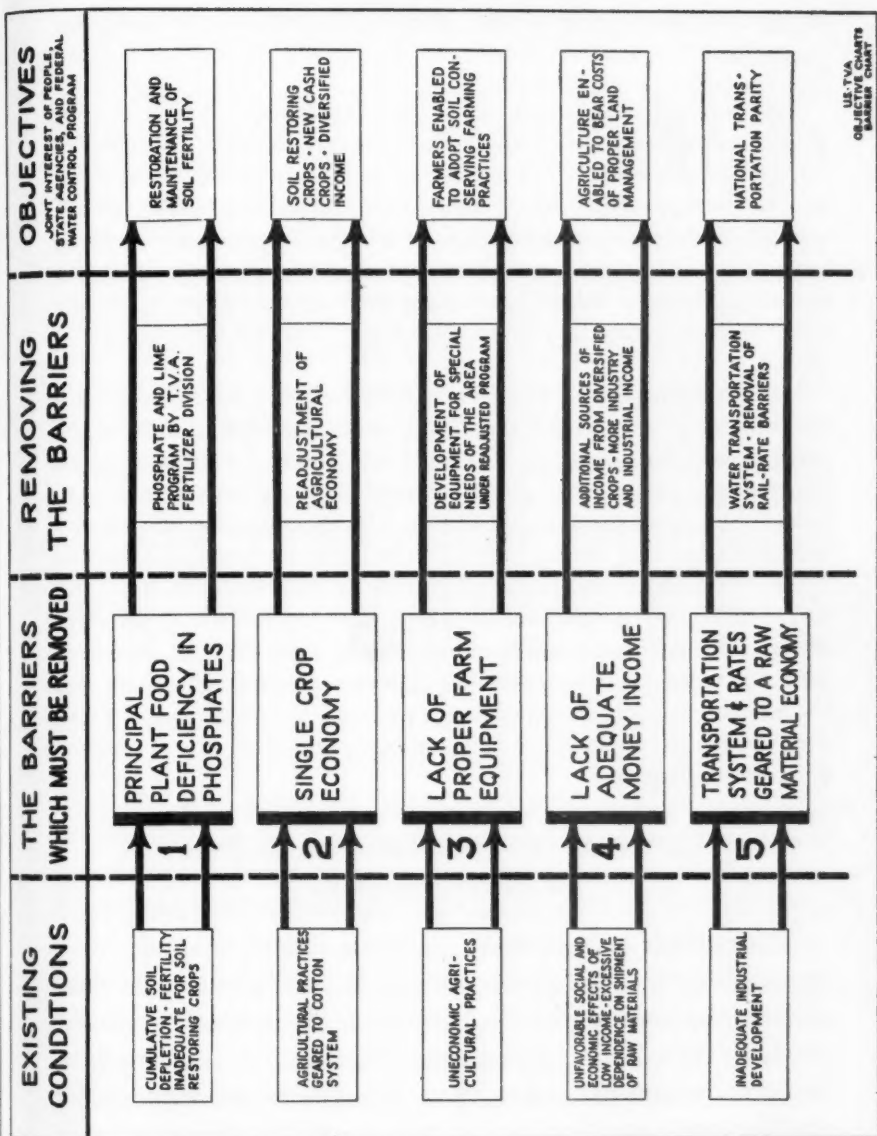
problems. For without the willing coöperation of the people themselves, decentralization is little more than a formal acknowledgment that policies and programs should be intelligently and promptly adapted in accordance with local conditions and desires. But first a few remarks on the interrelation of planning and action.

#### THE INTERRELATION BETWEEN PLANNING AND ACTION

In the experience of the Authority there is no sharp distinction administratively between the formulation and the execution of plans, and, one might also add, there has never been any question of whether the TVA should or should not *plan*. No dam would have been built, no power line constructed, no phosphates produced without plans; and planning, for the TVA, has meant the process of identifying regional problems or unrealized opportunities and of securing the maximum available technical contributions to bear on them. In this sense the administrative process in the Authority is one which attempts to combine knowledge, foresight, and the "know-how" of getting action that is psychologically feasible. All this of necessity requires plans at all levels of detail and complexity, and of equal necessity in a democratic nation requires the joint participation of local, State, and Federal agencies and the people to be affected when plans are carried out.

Within the Authority, this means in practice that the same individual, staff, or department may frequently participate at several stages in the planning, formulation, and execution of the same project. Administrators who are responsible for the execution of plans directly participate in the general planning of the program so that decisions will not only have the benefit of intensely practical experience, but will be administered with a willing and full understanding of what they are intended to accomplish. This has aided the integration not only of the several phases of the Authority's program, but also the integration of these various phases with the activities and





U.S. TVA  
OBJECTIVE CHARTS  
BUREAU CHART  
IN 1937

objectives of local groups, State agencies, and other Federal organizations.

This dual responsibility for planning and operations has given to such plans a realism and timeliness not otherwise easily achieved. The report of the Authority, a Federally owned and operated corporation, to the President on the regional problem of interterritorial freight rates, for example, grew out of, and drew reality from, the Authority's experience in shipping large-scale purchases and requisitions of material for its construction and operations, from its task of distributing fertilizers, and from its concern over the development of indigenous industry utilizing low-cost electric power.

In addition, regional problems may have a solution not effectively envisioned except through collaborative planning brought to focus at the point of operating decisions. The Authority's plans for discharging its Federal responsibility to produce improved plant nutrients were an outgrowth of conferences and consultation with representative officials and technical experts of the agricultural experiment stations and extension agencies of the local land-grant colleges, the National Association of Land Grant Colleges, representative farm organizations, and the Department of Agriculture. These conferences culminated in the decision to concentrate plant-food experimentation on phosphates, an element which met the national defense and soil-conservation requirements of the TVA statutes and which responded to the basic needs of both local and national agricultural programs.

#### THE COÖPERATIVE APPROACH TO THE SOLUTION OF REGIONAL PROBLEMS

This example of a planning procedure related to an operating responsibility is also illustrative of what is unquestionably the most significant administrative characteristic of the Authority—the dependence upon the coöperative action of the citizens, the institutions, and governments of the area, upon the initiative and responsibility that the people and their local agencies are willing to assume in the solution of regional problems. In the above example, reliance upon established agricultural organizations enabled the Authority to find

enthusiastic local coöperation and participation in its subsequent program to test the phosphates under practical farm conditions.

The Authority's role as a regional development agency has been that of encouraging and facilitating the participation of existing agencies in the interest of the more effective results and economy which can be achieved through such a process. One of the first tasks presented to the Authority was the job of relating the definite things which it was directed to do—flood control, navigation, power, experimental development of fertilizers and tests of their use—with the more comprehensive task of aiding a full and proper development of the region. Obviously, in order to begin this task, the Authority needed to learn what obstacles had to be overcome, what hazards and objections stood in the way of eliminating the tragic disparity between the abundance of resources and the paucity of regional income. To find these facts, the Authority went to the obvious source of information—the agencies of the people who have lived with those problems, who know what they are, who have struggled with them, thought about them, and have for these many years been attempting to do something about them, and have made in many instances astounding progress against great odds.

In this way there has been focused on the region's fundamental resource problems not only the operating program of the Authority, but services of the central departments of the Federal Government and the regional knowledge and facilities of State and local governmental units, institutions, and organizations.\*

Mention has already been made of certain phases of the Authority's program which involved the active coöperation of national and State agricultural organizations and local farm groups.\* Another example of the fruitfulness of coöperation may be found in the efforts of the Authority, State agencies, and local communities to solve the number of community planning and adjustment problems occasioned by the construction program of the Authority.\*

\*Illustrated in articles that follow.

The story of Guntersville, Alabama, for example, is a dramatic story of planned adjustments to new conditions resulting from the activities of the Tennessee Valley Authority. Prior to the advent of TVA, Guntersville was a small inland agricultural trading center with a population of about three thousand. With the construction of Guntersville Dam and the flooding of the bottom lands which formed the community's principal resource base, some of the citizens of Guntersville felt that their city was economically doomed. But the citizens awoke one morning to find their town located on a wooded peninsula jutting out into a beautiful blue lake. People heard of the beauty of the site of Guntersville and came there to see the new lake. They bought lunches and fishing tackle, and they rented boats; and a new source of income came to town. Soon an oil terminal was built at the outskirts of Guntersville. Industries dependent upon deep-water navigation located near by.

Realizing that Guntersville was not dead but was rapidly changing from an inland agricultural trading center to a growing recreational and industrial center, the city council created an official planning commission to guide new growth so as to keep Guntersville a pleasant place in which to live and to make the city increasingly attractive both to recreation seekers and to industry—uses which may seriously conflict if not properly located and planned. The Planning Commission worked hard, and the results of its labors are becoming evident. With the technical assistance and advice of the TVA and the Alabama State Planning Commission, definite progress has been made toward utilizing the opportunities created by the new physical environment: a zoning ordinance now facilitates orderly municipal development, a public park and boat harbor have been developed on the tip of the peninsula, and a major street plan has recently been adopted by the Planning Commission. As a result of this and similar coöperative demonstrations new techniques for accomplishing local planning through State, regional, and local coöperation are being developed, and the scope of community planning is being extended beyond the sphere of physical improvements.

Local governmental problems arising in the course of the construction and operating responsibilities of the Authority have required careful study to provide a sound basis for determining the precise nature and extent of the problems and to suggest feasible

solutions. The necessity for such study has also provided practical occasions and opportunities for effective coöperation with appropriate local agencies.<sup>5</sup> Through its own staff, the Authority conducted surveys of municipal government in Mississippi and Tennessee which were published by the Mississippi State Planning Commission and the University of Tennessee, respectively. Studies of municipal government in Alabama and Georgia have been made by the State universities of those States under coöperative agreements with the Authority. The Alabama study was carried on by the Bureau of Public Administration of the State University, the work of the Bureau having started with this particular study.

The acquisition of utility properties and of reservoir lands gave rise to problems in the adjustment of the finances and services of the local governmental units concerned. The problem of loss of tax base was given careful study by the Authority and Congress with the result that the TVA Act was amended to provide for equitable payments in lieu of taxes. Concurrently with the in-lieu payments the Authority is assisting the affected counties in adjusting and improving their financial situation. A study of county government and administration in Tennessee has recently been published by the Authority, and two pamphlets dealing with local government accounting have been developed under a coöperative arrangement between the University of Tennessee and the Authority. A manual dealing with assessment procedures and practices is now being prepared.

The right to help formulate plans and recommendations, to accept or reject recommended programs and courses of action, or to seek other alternatives, or to do nothing at all rests with the local community and its representatives. The TVA does not share this right; as a democratic institution created by the joint action of the representatives of all communities it is itself an expression of this

<sup>5</sup> Lawrence L. Durisch, "Local Government and the TVA Program," *Public Administration Review*, 1: 4 (September 1941), pp. 326-334.

right. It does share, as a consequence, the responsibility of participating with the communities in their educational task of assuring that the exercise of their fundamental right of self-determination shall be increasingly wise and farsighted.

In this discussion of methods and procedures embodied in the Authority's internal administration and its external relationships no attempt is made to describe the current emphasis upon national defense expressed by almost all of its efforts and programs. The significance of the Tennessee Valley program in the present national emergency is a story to be told elsewhere. It is a fundamental thesis in the Authority's thinking and action that these processes of democratic coöperation, developed and practised from the beginning, make it possible to assume greatly expanded and accelerated programs of vital importance to national defense. More dams for more power for more aluminum, continued production of phosphates for an expanded food supply and rehabilitation of the old nitrate plants for production of munitions, emergency service in the defense housing program, the realization of the benefits of several years of patient chemical and industrial research in strategic materials and processes now crucially important in defense—all of these activities go on as before, only faster. The habit and experience gained in a peacetime practice of day-by-day democratic relationships with the agencies and citizens of the region are now paying dividends in speedier mobilization of effort and achievement of results. Far from hampering the effectiveness of the Authority's response to the emergency, these methods of internal administration and external relationships have made emergency accomplishment possible on the double-quick without denial of the ideals and objectives of democracy.

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*Howard K. Menhinick*, Director of the TVA's Department of Regional Studies, was



graduated from Michigan State College in 1923, and from Harvard University as Master in Landscape Architecture in City Planning in 1928. He has been a member of the faculties of both institutions. Mr. Menhinick also was engaged in the preparation of reports for the National Resources Committee and served as Executive Secretary and Editor of *The Planners Journal* published by the American City Planning Institute. He came to the Authority in July 1937.

## COMMUNITY EDUCATION IMPROVEMENT UNDER THE IMPACT OF THE CONSTRUCTION PROGRAM

EUGENE L. BISHOP, RAYMOND F. LEONARD, AND  
MALCOLM G. LITTLE

Building large dams inevitably causes dislocations of community life. Behind such dams, large reservoir areas will be flooded. The adjustments to be made for homes, schools, roads, businesses, towns, and natural resources are serious and extensive, for the reservoirs behind TVA dams have in one instance covered as many as 256,000 acres and required the removal of as many as 3,000 families from homes and lands which may have been ancestral. For example, in the Norris reservoir, approximately sixty per cent of the families owned their own farms.

Furthermore, building large dams requires large numbers of people, placing sharp and sudden burdens on the community services of adjoining towns. Through a period of two to three years, three to four thousand persons will be employed, many of whom must be brought in from outside the immediate area of the dam site because too few men with the necessary skills are available in the immediate area, or because employees are transferred from completed to the newly begun projects. The communities encounter typical boom problems of sanitation, parking, and extension of roads and services. Meanwhile, along the reservoir margins, other communities—both large and small—find themselves with readjustment problems growing out of changes in economic resource base and resulting changes



in manner of life, as well as physical changes in school facilities, streets and roads, and water supply and sewerage systems.

Not all of the impact is unfavorable, of course. In the wake of the population increase is an increase of spendible funds. Rents, food prices, amusement prices may rise sharply because of the newly stimulated demands. Unemployment may decrease as local persons obtain work on the project. "It's the greatest boom this town ever had," said the secretary of the chamber of commerce of one small town, recently flooded with new money from dam construction workers.

The Tennessee Valley Authority has recognized certain responsibilities for relieving the adverse impacts of dam construction. Flooded roads are rebuilt on higher land; schools in the path of the reservoir are purchased; assistance to families forced to find new homes and new lands is given. Such assistance is simple justice; more significant, perhaps, is the fact that the TVA and the coöperating agencies since the beginning of the construction program have used the immediate problems and crises as levers to raise permanently the levels of community organization. The educational services, the public-health efforts, and the planning of the communities affected by the reservoirs have been approached with this in mind.

#### COMMUNITY EDUCATION SERVICES

At the dams and in the reservoirs the educational services developed by the Authority in coöperation with educational agencies fall into two classes: (1) those required by the creation of a construction village and the needs for skilled workers, and (2) those required by the effect of reservoir construction on community agencies. In both classes, the Authority and State and local agencies have recognized joint responsibilities and have pooled their resources to get the job done. Because in many cases the job to be done is extensive and new, the coöperating agencies obtain experience with new objectives

which may permanently alter their programs even after the TVA has ended its construction activities.

In the construction villages themselves the Authority has been concerned with providing opportunities for recreation, employee training, library service, and school facilities for children of employees. In varying degrees, these programs have been worked out with the assistance and support of local agencies.

Employee training programs within the Authority arise from objectives related to efficiency on the job, preparation for more responsible positions in the TVA, and for larger understanding of the total program of the Authority. The State departments of education, with Smith-Hughes and George-Deen funds, support these programs, adapting procedures and methods to the needs of training in construction work. Organized labor has a recognized and helpful voice in planning and administering the program. What emerges is a pattern for training in trade skills and professional competence which will have usefulness far beyond the end of the construction period.

Education services are an important factor in the community environment for employees and their families in the construction villages. School facilities for employees' children, adult-education opportunities, library service, and recreation programs for both white and Negro communities are necessary parts of the program. In so far as possible, the services and facilities are provided through coöperative arrangements with local agencies. This coöperation has been successful not only in meeting the needs of the villages, but also has stimulated and strengthened the local public agencies of the area.

It is from this method of coöperative endeavor that the chief permanent results arise from the educational programs of the construction villages. In library service, for example, the Huntsville, Alabama, Public Library now serves three counties where before construction of the Guntersville Dam it had served Huntsville alone. During construction of the dam, the library served the construction village and the adjoining counties in which TVA employees were located. The TVA paid the library board for the extra services and the board administered the program. The desire for library service was stimulated to such an extent that library service has continued on a tricounty basis since construction ended and the TVA

withdrew its financial support. A similar development occurred at the Hiwassee Dam in Cherokee County, North Carolina. Here the county *voted* a special tax, as required by State law, to continue the county-wide library service first begun in response to needs of TVA employees. These developments assume particular significance in view of the fact that over half of the counties in the Tennessee Valley area have no public-library service whatever.

School services have also undergone changes which have stemmed directly from the coöperative approach between the TVA and local agencies. The usual method has come to be for the local county superintendent to call upon the State department of education to make a county-wide survey of the schools of a reservoir-affected county before the beginning of construction. The survey is pointed toward recommendations on long-term developments to increase the effectiveness of the school system and toward solutions of the immediate problems caused by the location of certain schools in the reservoir and the expected increase of school populations near the construction activity. Where possible, the two immediate problems are solved together. At Gilbertsville, Kentucky, for example, a new consolidated elementary school was built by the Marshall County Board of Education with funds obtained from the sale of a school on land needed by TVA for building the Kentucky Dam. Under a contract whereby the TVA pays the county a per-pupil tuition, the children from the construction village attend the new school. When construction ends and the needs of TVA are reduced, additional consolidations can be made upon the new school. Similar developments have occurred in Marshall County, Alabama, the site of the Guntersville Dam, and in Cherokee County, North Carolina, although in the latter the consolidation occurred entirely after construction in buildings formerly used to house workmen.

Apart from the demands of the construction villages, the building of a dam seriously affects county school services. Here the approach has been to utilize the facilities of the State departments of education, the local school systems, and the TVA. On the basis of a survey, a State department recommends to TVA the schools which should be purchased, either because they will be flooded or because the water will almost completely destroy the usefulness of the school even though the building will not actually be flooded. At the same time the State department recommends plans for consolidation to the county, plans which have become feasible through the sale of the schools. At present, for example, new consolidated

schools are being built in Rhea County, Tennessee, by the County Board of Education, with funds obtained in this way. The significant point is that the effectiveness of the school system is increased permanently.

Not all school problems have been solved, however. The school systems of small towns are placed under an undue burden when dams are located near by. Since the town school system is often independent of the county system, it owns no schools on land needed for reservoirs or dams, and therefore does not obtain means for dealing with the immediate problem. The community facilities bill (HR 4545) recently passed by Congress will provide funds through the Federal Works Agency to alleviate the pressures on community facilities caused by the national defense program. Because of the relationship of the TVA to national defense, it is possible that certain funds appropriated under this bill will be allocated to towns in the Valley which suffer from excessive and temporary population increases as a result of the TVA construction program.

The Authority and its cooperating agencies have therefore looked upon crises as opportunities out of which permanent improvements may be developed. Increasing concern for a coordinated approach toward educational problems has recently resulted in the execution of agreements with the State departments of education in both Kentucky and Tennessee defining mutual interests of the departments and the Authority in dam and reservoir areas. The Authority has provided an education officer for appropriate areas; the State department has agreed to undertake to establish a coordinating committee for the area, on which the various educational agencies of that area will be represented. Using the impact of the construction program as a point of departure, the joint efforts will be directed toward developing a pattern of cooperation and coordination, under which the contributions of the various educational agencies will be welded into an integrated attack on the area's educational problems. The results as yet are too few to show whether this goal can be reached, but there have been encouraging indications that health officials, agricultural specialists, librarians, and school people, if given the opportunity, will work together toward common ends.

#### PUBLIC HEALTH

In the field of public health the Authority has also made use of the opportunities and responsibilities resulting from construction pro-

grams. An important instance of this has been the establishment by the Tennessee Valley States, in coöperation with the Authority, of county or district health departments in areas where none had existed before Authority operations began in that particular area, and in the enlargement of the scope of activities of units which were already in operation.

When construction of a dam is authorized, representatives of the Authority meet with representatives of the State health department in the State where the dam is to be built to appraise the increase in public-health problems that will result from the temporary increase of population in that area and from the change in ordinary modes of life which results from establishing a construction camp in a rural district. Such a conference is guided by the point of view that a permanent benefit may come to the county or district in question if the burden of supplying health services is thrown upon the local community, rather than being carried by the Authority. If no organized public-health department exists in the county at the time, it may be possible to create one; if the organization already exists, it may be possible to strengthen it. With this in mind the Authority provides funds for this "coöperative public health" work, the local community also providing funds as well as administration of the actual services. Thus the educational advantage which comes to a community from the execution of any public service is earned by the local people. The people in the area become accustomed to using the services supplied, and so carry over into the postconstruction period an understanding of and desire for these services. As a result of this approach, permanent, full-time organizations are now functioning in a number of counties in the Valley where no public-health organization existed. In other counties where services had already been established, increased services have become a permanent feature.

The quality of services in the local community may also be increased through the coöperative relationships. The Authority, by virtue of its regional character, may be able to conduct research in public-health problems which would not be possible on the same scale for any one State. For example, the Authority, as a corporation responsible for the creation of the reservoirs, is responsible for providing necessary malaria control measures. In a chain of lakes such control both technically and economically is a large enough problem to justify research work to improve methods of



prevention. Once the improved methods have been identified and tested, they may also be applied by the States and local governments to their own malaria problems, which were widespread prior to the Authority's coming into the area. The malaria program is only one example of this type of relationship. Similar relationships have been established for the stream-pollution studies where the Authority has been working in close coöperation with the States and with industries in the region in studying pollution problems in the Tennessee River system.

The most intensive public-health education effort related to the Authority's construction activities is in the health district which is made up of the eight northernmost counties of Alabama. Here the Authority has been providing funds for several years for the type of coöperative health work described above. During the past year (1940-1941), however, some of these funds have been diverted to a program of health education in these counties. A coördinator of health education now serves under the district health officer to stimulate and coördinate health education in the schools and the communities at large in the district. Starting out as an employee strictly of the State Health Department, this coördinator of health education has established close working relationships with the State Teachers College, and through both that institution and by direct contact in the communities is exerting considerable influence in the approach to health teaching in this district. In fact, this influence has a State-wide scope, as the coördinator of health education occupies the only position of that kind in the State and is able to bring his unique experience to bear on important State curriculum problems. This program has such promise of usefulness to the North Alabama District and to the State as a whole that it is expected that a second health-education position will be added during the year 1941-1942.

The North Alabama health-education program is thus a very good example of how the impact of the construction program has been used for permanent community education improvement. Funds made available out of the responsibility of the Authority in an area where construction and operating activities were in progress have been directed toward the establishment of an educational program which should have lasting benefits in the educational system of the district and the State as a whole.

Another type of influence is exerted by the construction program on the Authority's construction employees themselves. As these employees are selected in large part from the Valley area and as the majority of them will

remain in this area after the Authority's construction work there is completed, the health program established for employees has important consequences in their communities. Every employee at the time of employment receives a thorough physical examination, and another examination when his service with the organization is completed. Many construction workers are employed and reemployed several times in the course of a project, and the men gain, in addition to the benefits of the examination itself, an increased understanding of the nature and objectives of periodic health examinations. Health-guidance suggestions made in the course of these examinations tend to carry over into behavior after termination of employment. A similar educational objective is achieved in the immunization of all employees against smallpox and typhoid, and the compulsory treatment of venereal disease cases. In isolated construction camps, the effects are further extended because the families of workers who live in the camp come under the health-guidance program which provides necessary medical and health-guidance services for a small charge.

In addition to these indirect benefits, specific health educational objectives are set up under the employee health-education program. This program has been most intensive in the field of industrial safety, where concentrated efforts to develop safety consciousness have been successful in keeping accident rates low. There is little doubt that the safety program has permanently affected the work habits and attitudes of a great majority of the construction workers. Although other health educational objectives have not been developed to the same extent as the safety program, a number of steps have been taken, such as the organization of a series of health talks in construction villages, dissemination of health pamphlets to workers, and similar activities. Present plans call for the intensification of this effort, with special emphasis to be directed toward education in nutritional matters. As the Authority operates cafeterias at all construction projects it is expected that the nutrition-education program will be tied in directly with the serving of meals to employees.

#### COMMUNITY PLANNING

As we have seen, the huge dams and great lakes which control the waters of the Tennessee River bring with them the need for many readjustments in rural and urban community living. To assist in



making readjustments in a coördinated way, the Authority works in coöperation with the respective State planning commissions. The work is carried on through local planning commissions established officially by the communities. These local planning commissions work with their citizens in establishing objectives, assembling diverse opinions, and making development decisions. Planning programs to date have resulted in the establishment of zoning protection, in the improvement of streets and highways, in the readjustments and extension of school facilities, in the development of the recreational and other types of resources provided by the new reservoirs—proper location of bulk oil terminals, boat harbors, swimming beaches, vacation-cabin areas, and public parks—and in improvements in the administration of community services.

Coöperative agreements now in effect between the TVA and the State planning commissions of Alabama and Tennessee make it possible for the State planning commissions to employ resident planning technicians and to aid local planning commissions in initiating and guiding the planning programs in communities affected by TVA activities. The TVA staff gives technical assistance on request of the State Planning Commission.

The specific objectives of the planning-assistance program are:

1. To aid communities in the solution of their readjustment problems
2. To secure the establishment of planning as a recognized function of local government

A necessary feature of the regional-State-local planning program is the establishment of local agencies to express and implement the community will. These are usually official citizen planning commissions, or, in the case of unincorporated communities, unofficial but representative citizen committees. Once organized, the planning commissions or committees endeavor to secure public understanding and support for the planning program. Better community development is the goal of the planning activity.

The primary method of stimulating local interest and support for planning is by demonstration of actual planning accomplishments: the adop-

tion and administration of a zoning ordinance; creation of a waterfront park; the solution of parking difficulties; school readjustment; analysis and improvement of municipal and financial accounting methods.

A second factor in the stimulation of local interest has already been mentioned—independence of action by the local planning commission. At the beginning of a community program, the State planning commission representative makes it clear that there are possibilities in planning which lie at the door of the community and the community planning commission. As stated by a consultant to the program: "Planning will be more productive if scientific knowledge is tempered with folk knowledge; community problems are best revealed by study of the problems which the community itself believes are important." The assistance of the State planning commission and the Authority is confined to technical assistance applied to the problems which the commission itself may choose.

Citizen interest in local planning begins with the establishment of local planning commissions or committees. A nucleus of community leaders thus becomes fully informed about planning opportunities and accustomed to follow the planning process. In the small communities this in itself is proving effective. However, more community-wide citizen education in planning is usually desirable and necessary; this is furthered through descriptions of program activities before civic groups, by joint meetings with city school boards and councils, by public hearings, by newspaper articles and editorials, and by the showing of city planning films. Through such means the people of the communities become acquainted with planning programs and procedures and look to their planning commissions and committees for studies and recommendations for solutions to local problems.

State planning commissions and Federal agencies have become interested in the benefits to their own State and Federal programs that may arise from efficient local planning programs in the various communities of the area. The Federal Housing Administration is assisting the Tennessee State Planning Commission in the organization and establishment of local planning agencies in the cities of northeast Tennessee by employing a resident technician and participating in the employment of additional technical assistants. The Atlanta regional office of the National Resources Planning Board is assisting the Alabama, Mississippi, Georgia, and other State planning commissions in the area to meet the local community problems caused by the construction of defense plants and military bases.

Thus, from the immediate problems of a river-development program there is emerging a concerted effort by Federal, regional, State, and local agencies in the region to develop and provide the necessary implementation for planning at each governmental level.

The Authority expects to continue its local planning-assistance program with increased emphasis on citizen education in all phases of planning with the view to achieving the early assumption of local planning by State and local agencies. At the beginning the Authority found few cities in the Tennessee Valley with active planning programs. Local appreciation of the value of planning was negligible. Within the past few years, in the Valley area of Tennessee and Alabama alone, seventeen new city planning commissions have been established and two have resumed active planning programs; three unofficial community planning committees have undertaken community-readjustment programs; and five county planning commissions have been formed—an encouraging start in the establishment of local planning as a continuing procedure in local government.

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*Malcolm G. Little* is Chief of the Training Division of the TVA Personnel Department. He is responsible for coordination and professional supervision of employee training, educational facilities, and programs in TVA-operated camps and villages, relationships with State and local educational systems, and aids to other TVA departments using educational tools in their regional programs. His 25 years of experience in educational administration were connected chiefly with the public schools and adult-education systems of the University of North Carolina and the University of Wisconsin. He has an A.M. degree from Columbia University.

## EDUCATION FOR SUSTAINED REGIONAL PRODUCTIVITY

WILLIS M. BAKER AND WILLIAM M. LANDESS

The control of water on the land has been given as an objective of the Tennessee Valley Authority's forestry, fertilizer, and agricultural activities. But obviously men would profit little by mere restoration of vegetation to protect the soil against the destructive force of falling, rushing water. They must live at the same time. Productivity of the land must be maintained. Indeed, an increase in the production of several deficiency crops of the region is essential. Increased, then *sustained*, productivity of resources is essential to regional development.

An average of 6,000 tons of water falls on each of the Tennessee Valley's 26,000,000 acres in a year. This land is largely in small private holdings. Hence, action to remedy the destructive effects is dependent upon the everyday activities of the people.

A sense of responsibility in such matters is an essential attribute of good citizenship that can be discharged only through active participation. Recognition and acceptance of the responsibility cannot be expected until the extreme importance of the problem and its remedy are understood. To this end, public education is necessary. Indeed, it may be said that the Authority's activities in forestry, fertilizer, and agriculture to control water on the land hinge on education.<sup>3, 12 \*</sup>

### FOREST-FIRE EDUCATION

For example, the Authority's chief attack upon forest fires is through education. In the Valley the terrible destruction by fire is one of the major obstacles preventing forest lands from reaching a state of sustained productivity. The Authority maintains trained

\* Note: Numbers refer to references in bibliography.

50 INCHES OF RAIN IN  
THE TENNESSEE VALLEY  
CONTROLLED



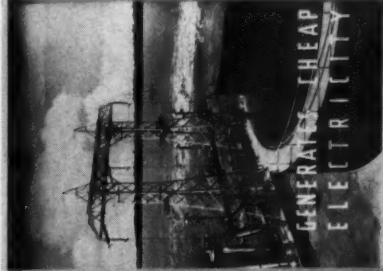
SPEEDS PROTECTIVE  
COVER GROWTH



MAKES DEEP  
RIVER CHANNELS



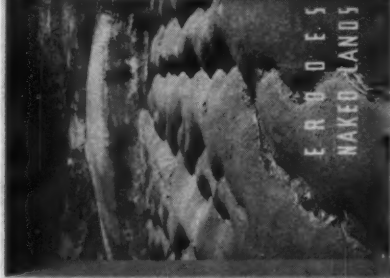
GENERATES CHEAP  
ELECTRICITY



50 INCHES OF RAIN IN  
THE TENNESSEE VALLEY  
UNCONTROLLED



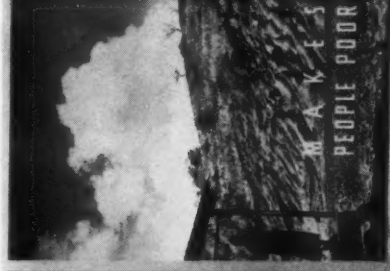
ERODES  
NAKED LANDS



FLOODS TOWN  
AND COUNTRY



MAKES  
PEOPLE POOR





# THE FLOODS YOU SEE

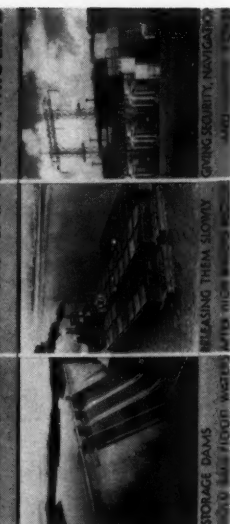
UNCONTROLLED WATERS

SWELL THE RIVERS

DEATH & DESTRUCTION FOLLOW



FLOODS ON THE RIVERS CAN BE CONTROLLED



STORAGE DAMS  
HOLD BACK FLOOD WATERS

RELEASE THEM SLOWLY  
AFTER RISE

BRING SECURITY, NAVIGATION  
AND

# THE FLOODS YOU DO NOT SEE

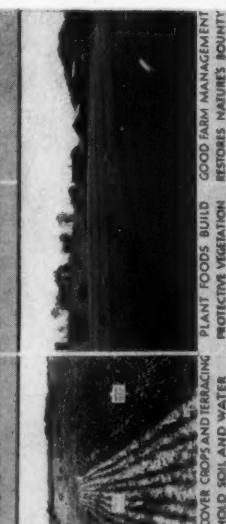
WASH AWAY THE TOPSOIL

SCAR THE HILLSIDES

LEAVE MORE FARMS ABANDONED EVERY YEAR



FLOODS ON THE LAND CAN BE CONTROLLED



COVER CROPS AND TERRACING  
HOLD SOIL AND WATER

PLANT FOODS BUILD  
PROTECTIVE VEGETATION

GOOD FARM MANAGEMENT  
RESTORES NATURE'S BOUNTY



personnel, equipped with motion-picture sound trucks and visual educational material, who reach down to the grass roots with their appeal, "Stop Forest Fires."

The officials of two large wood utilization plants in east Tennessee suggested through the State district forester that a forest-fire prevention program be initiated in a mountain county suffering from a chronic case of woods burning. A TVA forester, who had special training in public education, went into the county and helped to organize an educational program. The services of the State forestry agency, the county agricultural agent, and all existing machinery already having pipe lines of contact flowing into the county were utilized. Each organization contributed in its own special way to the common objective, prevention of woods burning. Community meetings were held, school programs arranged, literature distributed, and person-to-person contacts made.

One hundred twenty-nine motion-picture programs were presented throughout the county to over 16,000 persons. A fire-prevention essay contest was held in the public schools, and more than 500 papers on subjects of conservation were entered. A teaching unit on forestry was prepared and placed in all schools for use by the teachers.<sup>4</sup> Attractive fire-prevention posters were framed and set up in every public building. Fire-control pledge cards were signed by more than 300 landowners. Forty-five fire-control news articles, totaling more than 1,000 column inches, appeared in three local newspapers. Nearly 8,000 pieces of forestry literature were distributed. Hundreds of "Stop Forest Fire" stickers were put on automobile windshields. Moving pictures telling of the waste and destruction of forest fires were shown in the theaters,<sup>5</sup> and personal contacts were made with nearly 100 key individuals who were in a position to further the fire-prevention program.

What is the measure of results? Quantitatively, the results of any educational program are difficult to determine, yet similar programs elsewhere in the Valley have resulted in many counties organizing for forest-fire control. Time will tell, in most instances. An incident which happened while the program was going on proves that some seed falls on fertile ground. Buster Sisk, a 15-year-old contestant in the essay contest, found the woods burning. He reported the fire to the local towerman, and a crew of men were dispatched immediately. The men found, much to their relief, a small, charred area with a neatly raked line around it instead of

flames and eye-stinging woods' smoke. The fire had been put out. Buster had not considered his duty done by reporting the fire; he had grabbed a garden rake from the barn, run back, and put out the fire before it damaged valuable forest land. Buster Sisk had developed a consciousness, an appreciation, of green, unburned forest.

Since February 1934, approximately 5,000 educational motion-picture programs dealing with forest-fire control have been presented to more than 686,000 persons throughout the Valley in coöperation with the State forestry agencies. The Authority is now making local forest-fire movies, and the first is practically completed.<sup>9</sup> The fire educational work, performed in collaboration with other agencies, has been at least partially responsible for an extension of organized protection and for a gradual improvement in public sentiment against forest burning.<sup>9</sup>

#### TREE PLANTING

There are more than 4,500 farmers in the Valley whose "direct coöperation" with the Authority and the State extension services has resulted in the planting of nearly 16,000,000 trees on 14,000 acres of farm lands, eroded and abandoned for agriculture. TVA's first approach in demonstrating tree planting for erosion control depended entirely on CCC camps, and under this program over 116,000,000 trees have been planted on 90,000 eroding acres. Since 1935, however, the camps have been furnishing labor and materials only where the erosion job is too great for the landowner alone. The second method, where the individual farmer furnishes all labor and materials and the TVA supplies the seedlings and provides general supervision, also has taken hold with the county agents and the landowners because it greatly broadens the scope of these operations. Last year, increasing landowner interest, inspired by a county agent-TVA plant-more-trees program, was a gratifying and significant development. Over 1,700 farmers planted almost double the number of trees planted the previous year.

"MOVIE" ENTERTAINMENT AND INFORMATION

Four two-reel, color motion pictures in the 16 mm. size are being made, one for each major region in the Valley where soil, planting, and erosion control problems are different.<sup>9</sup> Representative people come to life on the screen and tell why every acre should pay its way, and how, with little trees, they have succeeded in restoring eroded, abandoned acres to protection and future productivity. Illustrated pamphlets showing how to plant trees, build brush dams, plow contour furrows, and pave ditch bottoms with brush will accompany the "movies" and be distributed.

Armed with such educational media, full of local and human interest, TVA district foresters help to organize interesting, informal community meetings, arranged by the county agents. A question-and-answer period follows the show, and there is individual conversation with each interested farmer on how to obtain and use the trees. The farmer makes application for a project with his county agent. The farmer, TVA forester or engineer, and the county agent diagnose the torn, sick land. The county agent advises concerning the relation of the tree planting to other enterprises of the farm. Remedial measures are decided upon and an agreement is signed specifying the responsibility of each party in a three-way pact. Later, the farmer's preparation of the site and his planting of TVA-furnished seedlings are supervised. After the second and fifth growing seasons, the trees are inspected for growth and survival. From then on, the farmer and his trees are on their own, but by this time he knows and cares for them as for any other crop.

Another instance of sustained productivity through education and demonstration is found in TVA activities to discover, develop, and test superior strains of trees that will provide quicker food or cash returns as well as be useful for erosion control or reforestation. These include nut trees, persimmons, black and honey locusts, and similar species that produce food for human beings, domesticated stock, and wild life. In cooperation with the State agricultural extension services, demonstration projects to encourage the planting of selected varieties of black walnut trees, because of their value in erosion control and as nut and timber producers, have been developed. Farmers are supplied with walnut and other species of

trees of improved varieties to serve as demonstrations for the communities in which they are set out.<sup>2</sup>

#### WATER AND WILD-LIFE RESOURCES

There is also an important educational aspect to the development of water and wild-life resources. Limnological and fisheries problems of the new TVA lakes are being studied with two laboratory boats. Similar studies have been undertaken to determine the best methods of developing and maintaining upland game, waterfowl, and fur species. The coöperation of thousands of individuals makes possible the obtaining of supplementary data by creel census, fisherman counts, and fur inventories. Results of the studies are passed on to the public, and especially to the sport fisherman, through press releases, editorials, and motion pictures.

One gets the impression that the average sport fisherman who casts or trolls in TVA reservoir waters knows his fishing. He talks in terms of density currents, oxygen content, surface temperatures, and other scientific limnological expressions. He is likely to know what gives fish the "bends," what bait to use and where to place it for bass, and just how deep to troll for pike. He may have known these things all his life, but it is more probable that he has been a member of an audience that saw the TVA color film, "Fishing on the Great Lakes of the South," or he has been reading the sports page of several Valley newspapers whose writers keep in close touch with the Biological Readjustment Division of the TVA Forestry Relations Department. Fishing in the lakes is increasing. It provides good sport and recreation and is an important new source of local income.<sup>3</sup>

#### THE FERTILIZER AND AGRICULTURAL ACTIVITIES

Education in the fertilizer and agricultural activities of the Authority centers around the test-demonstration farms that try out and introduce TVA's improved fertilizers. But the very setting of the work is of educational significance. The TVA Act provided that the idle facilities of the Muscle Shoals Nitrate Plant No. 2 be used

to reinforce the long-time agricultural work of the individual States and the national government. Congress, itself, described a new agricultural and educational procedure. Research findings to cheapen the production of fertilizer would be tried out immediately in full-sized manufacturing units and the products would be introduced to use at once through organizations of farmers. Coöperation with other agencies was specified.<sup>19</sup>

TVA's very first move back in 1933 was to get in touch with agricultural authorities of the Land Grant Colleges of the seven Tennessee Valley States and with representatives of farm organizations. They should help decide which of the several fertilizer nutrients to begin work with. These men were fully aware of the crucial importance of phosphorus and lime to a sustaining agriculture.<sup>20, 21</sup> They knew that these minerals are generally needed to make water- and soil-holding sod crops, especially legumes, grow successfully, and their recommendations have resulted in the knowledge being put to use by thousands of farmers as the test-demonstrations of thousands more.

#### THREE-WAY JOB

The work that followed is in three parts, each carried on by the organization best fitted for the job.<sup>22</sup> First, there is the actual chemical engineering and research at Muscle Shoals carried on by the Authority with the chemical-engineering plant equipment and authorizations provided by the Congress.<sup>23, 24</sup> Second, there is the preliminary testing of promising fertilizing materials from the Muscle Shoals laboratory. Upon their request, State and Federal experiment stations in 47 States have been sent materials. These organizations have at their command the agricultural-research experience and the experiment-station facilities of the country. The investigations are most intensive in the Tennessee Valley States.<sup>25</sup> Third, there is the introduction into use of materials with practical farmers. It was natural that this should be an activity of State agri-

cultural extension services. Their county agents and specialists have, through years of service as counselors to local agriculture, gained the confidence and support of the people. Furthermore, the extension services were already organized for the new undertaking.

The procedure decided upon with the State agencies is that county organizations select farmers to test and demonstrate TVA concentrated phosphatic fertilizers on a "whole-farm" basis. The object is not merely to compare yields. Rather, the test-demonstrators seek to find how, under all manner of local conditions, to achieve strength of land now essential to both defense and adjustment after the crisis. The Authority supplies the phosphates and reimburses the extension services for administration costs. In the Tennessee Valley payment covers salaries of assistant county agents in 112 watershed counties.

The three-way job has a coordinating committee composed of representatives of the United States Department of Agriculture, the Land Grant Institutions, and the Authority. In addition, extension and experiment-station directors of the Valley States meet semiannually.

#### TEST DEMONSTRATOR'S RESPONSIBILITY

When a farmer is a test demonstrator, he takes on a public responsibility. His privately owned farm becomes a semipublic test and demonstration ground. The demonstrator goes over his farming procedure with his county agent. He looks for possibilities of improvement made possible by use of the phosphate, for it may be possible for him to have soil-building legumes. Frequently, rotations are improved. Terracing and strip cropping contribute. New fences may be called for. Livestock are sometimes bought or sold. Tree planting may be necessary. The wife's good management of the home is essential. The advice of extension specialists is sought from time to time. There is lime to be purchased to go with the TVA phosphate and the phosphate freight bill to pay. The phosphate is used only on sod crops to build and sustain fertility and not to increase the production of "cash" row crops."

Of course, more adjustments are found necessary on some farms than on others. The demonstrators put the changes into effect as they are able.



There may be a quick revamping, or adjustments may come step by step over a period of years. All the while the neighbors have an eye on their demonstrator and frequently consult with him about his changes.

In addition to the individual farm test demonstrations, there are area test demonstrations made up of one to several dozen adjacent farms in a community or small watershed. These area projects are outgrowths of the people's observations of their individual demonstrators. A desire to speed up progress by the community as a whole wells up. The people form a community organization and take an inventory of their farms, their homes, and their community as a starting point. They have the additional advantage of studying and working together for community as well as individual goals.<sup>20, 21</sup>

Of interest is the method of taking area inventories. Men trained in agricultural economics and sociology did this work for the first organized areas, but soon inventorying was put entirely in the hands of local people. The product may not be a model of scientific coverage and accuracy, but it is their own job from which they learn basic facts first hand.

#### RESPONSE, EXTENT, AND COST

How did the farmers respond when the county agents called meetings and explained that concentrated phosphate was ready for farm test demonstration? In general, there was ready, sincere, and intelligent coöperation, but an example of the occasional skepticism is illuminating.

The 75 farmers who attended the meeting at the mountain schoolhouse on Tiger Creek could find no one willing to be a demonstrator. "Use that government fertilizer and soon the government will have our land," protested one. "I've seen farmers start using fertilizer in the Valley and they can't stop," added another. Selection of demonstrators was completed and the work got under way in the rest of the county. Twelve months later Newt Clark entered the county agent's office. "Remember me?" he asked. "I'm one who wouldn't be a demonstrator at the Tiger Creek school meeting. I've seen a demonstration over in Roane Valley. Is that proposition still open?"

In view of the Authority's primary obligations to the watershed of the Tennessee River, test-demonstration farms were established

there first. Now, some 12,800 area farms of 200 organized communities and 6,200 individual test-demonstrations are active in the Valley. The Valley States soon extended test-demonstrations to out-of-Valley counties representing different agricultural areas. Other States began to take up the activity, until today you may visit these practical community experimental and demonstration grounds in 769 counties of 27 States.<sup>28</sup>

What about the cost? An extension service study of 290 individual and area test-demonstration farms in Watauga County, North Carolina, which averaged a little more than 100 acres in size, gives an answer reduced to the farm-acre level. The study reports that, over the six-year period covered, the cost of the phosphates supplied by the Authority averaged 24 cents per farm acre per year. The cost of supervision, that is, the assistant county agent's salary and administrative and specialists' services, comes to an average of eight cents per acre per year. The total is 32 cents per acre per year.<sup>29</sup>

The study also made a measure of the influence of each demonstration. According to the best figures obtainable, from which duplication could not be eliminated, it reported that over the six-year period an average of 57 persons per year had visited each farm, and that of this number 35 had adopted improved farm practices and 15 had been influenced to participate in the AAA program.

#### ACCOMPLISHMENT

What is happening on test-demonstration farms? A representative answer is found in a study by the Tennessee Agricultural Extension Service of the records of 100 farms over a five-year period.<sup>30</sup> Seven stages of progress were observed and the number of farms that had advanced to each stage was determined. (*See table on page 169.*)

On the 71 farms that showed greater vigor in livestock, there was an increase of nine in the number of calves born per 100 cows. Of the 37 farms which showed improvement in land use, acreage in corn was reduced by 20 per cent, acreage of legumes and grasses for hay and pasture was in-

<i>Number of Farms</i>	<i>Stage</i>	
<i>Improved Biological Adjustments</i>		
83	I	More vigorous growth of legumes and grasses treated with lime, phosphate, and other fertilizers
71	II	Increased vigor of livestock consuming the legumes and grasses
52	III	Increased yields and quality of crops following the treated legumes and grasses
<i>Improved Farm Management</i>		
37	IV	Changes in land use, especially shifting row crops to pasture and hay
33	V	Adjustments in kinds and numbers of livestock and livestock production practices
<i>Improved Family Welfare</i>		
20	VI	Increased security and well-being of the family, or families, living on the farm
<i>Improved Community Welfare</i>		
9	VII	Increased security and well-being of the people of the neighborhood, community, county, area, State, region, and nation

creased by 15 per cent, and acreage in winter cover crops was increased by 26 per cent. Also on these 37 farms the number of cows was increased by 18 per cent, the number of calves was increased by 49 per cent, the number of cattle and calves bought was decreased by 25 per cent, and the quantities of dairy products sold were increased by 15 per cent.

#### EDUCATION UNDER ITS OWN POWER

Enthusiasm of participating farmers expresses itself in various ways. For example, the Authority does not provide a method of marking test-demonstration farms, but in many localities farmers have put up signs of their own. The wording of an attractively

hung homemade marker in Georgia is: "Dock Jones, Unit Farm Demonstrator, GA-TVA-U20." A farm sign in Tennessee ends with the invitation, "Visitors Welcome." The New York and Kentucky Extension Services have provided cardboard posters.

In Alabama a demonstration farmer remarked to the agent that his farm looked "mighty pretty," and the agent congratulated him. A few days later the farmer said that the stand of clover was better where phosphate had been used than on the untreated check plot, and remarked that his neighbors ought to see it. Again the preoccupied agent's response was limited. The next day the farmer made his third visit, this time adding to his crop report the fact that he had a shoat ready to barbecue. And so it came to pass that more than 100 farmers ate barbecue and talked progress on a test-demonstrator farm in Limestone County.

The Madison County Soil Conservation Association and the Whitesburg community organization entertained 500 farmers from 16 north Alabama counties. It was an all-day meeting—a tour in the morning, lunch, then speaking. The desire of these farmers to spread their test-demonstration results cost them at least \$200 for the barbecue.

In the Whitesburg community, just south of Huntsville, a sign reads: "Whitesburg Test-Demonstration Area—Coöperative Program Between Alabama Extension Service, Tennessee Valley Authority and Farmers of the Whitesburg Community—Cover Crops, Phosphate, and Erosion Control Practices." But the sign is not needed to show the remarkable evidence of an area of diversified farming in the midst of cotton country—beef cattle and luxuriant pasture, white clover, vetch, and crimson clover. Although large acreages are still in cotton, farmers spoke of seed saved from the three legumes as an important cash crop.

#### IMPRESSIONS

Some test demonstrators, true to human variability, advance faster and farther than others, while a few, for a variety of reasons, do not register progress. The influence on other farmers has been sampled. Several impressions predominate.

The approach of the agricultural workers in this activity is not "to show farmers how." County agents and specialists cannot possibly

know the "how" for the problems of thousands of individual farmers, shaped as they are by a multiplicity of agricultural and human factors. The trained man's contribution lies in applying technical guidance and educational devices to the end that the people make their own determinations.

In the test-demonstration activity, success is reached largely by the extent to which the demonstrations are actually a part of the over-all State agricultural program. "The test-demonstration farm program is something more than a project under Extension work—it is the Extension program at work," says the 1940 annual report of the Georgia Extension Service. That sentence also describes the set-up in many other States.<sup>27</sup>

As a final point, there is the relation between education and the nutrient elements of life—mineral nutrients bringing new life to soil, to crops, and to people; listless cattle growing sleek and vigorous because they eat from phosphated and limed pasture. Enthusiasm and ambition are generated by success.<sup>27, 28</sup>

#### CONCLUSION

Our national background of philosophy and tradition has been in the direction of extensive development and exploitation rather than toward conservation and sustained use. Even those who recognize the seriousness of the situation are reluctant to propose some of the measures that may be necessary for the progress they would like to see toward rehabilitation of resources. People, under our pattern of society, cannot be expected to change their mode of living or working suddenly. Nor can they be expected to do so until they are thoroughly convinced of the need of change and, even then, many of the changes must be adopted gradually so that economic conditions may not be seriously disrupted. Yet it is inescapable that certain far-reaching changes are essential and that, in many instances, they will require sacrifices. The people must understand this, and

they must be aided by the best technical knowledge and skill to follow the action necessary to correct the situation that faces them. An effective educational program for sustained productivity must be based upon adequate research. It must be skillful in its technique, and it must be realistic.

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## EDUCATION IN THE ADAPTATION OF THE VALLEY PEOPLE TO NEW FACTORS IN THE ENVIRONMENT

GEORGE D. MUNGER, CARROLL A. TOWNE, AND PHILIP W. VOLTZ

With the completion of each new dam—gradually transforming an uncurbed and silt-laden stream into a series of clear lakes controlled for the public benefit—important new factors are suddenly introduced or extended in the Valley area. Adaptation of the Valley people to these new factors becomes important, and the Authority has assisted in this adaptation in various ways. The methods and programs adopted by the Authority to deal with the utilization of electric power and the recreational use of the reservoir lakes will illustrate the general approach. It is obvious that if these two environmental factors, electric power and the lakes, are to be of value to the people, they must be used by the people. While power can be economically transported 300 to 400 miles, the recreational opportunities afforded by the lakes must be used in place. Power can go to the people but the people must go to the lakes.

### EDUCATION IN THE ADAPTATION OF THE VALLEY PEOPLE TO USES OF ELECTRICAL ENERGY

The spring of 1934 marks the practical beginning of the area-wide distribution of TVA-produced electrical power and of the Authority's program in developing the wider and more abundant use of electric power in homes, farms, commercial establishments, and

small industries. Since that time a large expansion in area distribution of TVA power has taken place until, by the early summer of 1941, over 450,000 metered customers were receiving power produced by the Authority. Over 65,000 of these live along 19,200 miles of rural lines, much of which is new construction serving farm homes which had not theretofore enjoyed electric service. The newness of rural electrification, the novelty of the type of organization for distribution, and the unfamiliarity of farm people with the practical and economical uses to which electricity could be put required an educational program. The low rate structure established by the Authority in itself immediately became an educational factor of considerable importance and undoubtedly made the utilization and developmental work less difficult.

*Decentralization of control of power.* At the beginning, it was decided that as far as possible and practicable the distribution of electricity from TVA's transmission lines to the ultimate consumer should be controlled by local people. The policy of decentralization should be carried into the power-distribution field. The greatest number of decisions should be made in the area served, by and through the participation of the people. The Authority's field of power operations was planned to be generation and transmission, exclusively. Retail distribution was to be by and through municipalities, coöperatives, and county-wide groups.

*Use of research.* Generally the same techniques have been used in all educational programs carried on directly by the Authority or through the established agencies. Getting the correct answers to the problems through studies, research, and investigations is the first step toward getting widespread acceptance of those answers in the field. Research studies and investigations on the income-producing possibilities on the farm or in expense-saving possibilities of electricity were carried on by engineers employed by the Authority and technicians employed by the land-grant colleges in the Valley States. This work done in rural electrification by the land-grant colleges

has often been with advice, assistance, and financial aid being made available in part, at least, by the Authority. The entire educational program has been planned and conducted through and with the existing public agencies in the region.

*Educational program techniques.* Research on appropriate uses of electricity was followed by efforts to secure general community acceptance of electricity both among key individuals and the large proportion of the people in the areas to be served, especially as it applied to extended use of electric power. From the very beginning the farm people in the higher income groups were interested in obtaining electric service. Often these people were already interested in obtaining service and had conducted the surveys of potential line extension at their own expense. They, in turn, received detailed assistance from employees of the Authority, county agents, and other extension workers. As far as electrical service was concerned, these people were the educators of their neighbors in regard to uses of electricity and costs. The results of these surveys were tabulated and if the area reported sufficient interest to justify the feasibility of line extensions, suitable local distribution agencies were found or were organized to construct the lines. Prior to the building of lines in rural areas, group meetings were held and plans for adequate home wiring installations were discussed. In all cases some technician familiar with proper wiring installations met with the community group. These meetings were held in country schoolrooms, churches, and homes in the immediate neighborhood of the area to be served. All other usual media of information were used—local newspapers, pamphlets, and, later, colored slides and motion pictures. The pictures and slides used the “before and after,” “right and wrong” approach.

The establishment of electrodemonstration farms in selected areas was also developed. In a few cases, a farm demonstrator was lent necessary equipment without cost. Assistance was given in installation and the demonstrator, in turn, agreed to keep records of kilowatt hours consumed

and other maintenance costs and to report the results of the demonstration. At the end of the demonstration period, the demonstrator had the right to purchase the equipment at a depreciated value or have it removed. In the great majority of cases, however, the demonstrator purchased the equipment at the beginning of the demonstration and voluntarily kept records and made reports.

In four of the Valley States, the State Agricultural Extension Services added one or more specialists in rural electrification to their regular staffs. These specialists carried on educational work with the county agents and home-demonstration agents and others in the area who were daily making personal contacts. The Authority provided financial assistance to the State Agricultural Extension Service for this work.

In two areas assistant county agents were engaged with the assistance of the Authority to devote approximately one half of their time exclusively to rural electrification. These assistant agents and other county agents have sponsored boys' groups specializing in electrical projects.

Considerable work has been carried on through other groups, such as dealers, schools, and churches. Educational programs conducted directly with dealers, salesmen, and service men have aided much in developing a total of approximately 800 electrical-appliance and equipment dealers within the area. Prior to 1934, appliances and equipment were largely supplied by sales and merchandising departments of the privately owned electrical utilities and other merchandisers in urban centers. Today a larger proportion of the appliance sales are made through smaller city and town dealers closer to the rural population. These dealers and their salesmen have a workable knowledge of electrical equipment and the aim has been to train them to sell the proper equipment effectively.

The educational program in electric use has been adopted, in part, by the school, not through the textbook, but through practice kitchens and actual demonstration in use. All of the land-grant colleges in the Valley States in which county agents, vocational teachers, and home-demonstration agents are trained have electrified practice kitchens and electrified farm equipment. The State of Mississippi has done an exceptional job. The State college has three practice kitchens for students. When not in use by the students, these kitchens have been used for the training of the active home-demonstration agents and each year different groups of leading farm women come back to school for two weeks for a course on the handling and care of electrical appliances.

In addition to the college course, farm girls of high-school age are often



taught proper preparation of food on electric ranges. The vocational teacher may have power-driven machinery or other electrical equipment such as a community refrigerator in the shop. Employees of the Authority have encouraged these installations and rendered assistance to the home-economics and vocational teachers.

Periodically, those carrying on the program in research, administration, or in the field gather in conferences to exchange ideas, check experiences, evaluate their present program, and plan for the future.

The training program for the management and personnel group has been more specifically planned and directed. This work has been conducted by specially trained personnel. Engineers employed by the Authority assist the distribution employees with engineering problems; the technique is learning by doing with proper guidance. The same technique applies to accountants, utilization, membership, and customer-relation employees.

With the directors, trustees, or power boards—the policy-making group—the task has been difficult. It was necessary first to arouse interest in the new privileges and responsibilities which were thrust upon the policy-making boards. Lack of interest had resulted, in some cases, in shifting even policy making to the paid manager. It was also necessary to establish the importance and the will to assume the responsibilities of policy making and also to offer simple and workable “how-to-do” recommendations. The board or trustee policy-making group served without any or with only modest compensation, but received no mileage or other expense allowances. Authority employees are available to discuss problems, policies, and programs. The aim has been to offer information and experiences of successful operation so that sound decisions and policies can be established.

Much of the above refers to the immediate program; the long-time program is more basic. It gets back to soil and the management of it for maximum standards of health and rural living, and at the same time in such a way as to provide a heritage for future generations. Using the ordinary approach again, research is used to investigate income-producing possibilities of electricity in farming operations, such as irrigation, electric hot beds, soil sterilizations, hay drying, sweet potato and tobacco curing, chicken raising under violet-ray lamps, etc. When the results are proved to be practical, the coöperating agencies carry the findings to the people, at first through test-farm demonstrations on practical farms to discover any “bugs” which may develop under actual farm conditions, and later



through the regular channels of bulletins, extension-service employees, and vocational teachers.

*Progress.* How well local groups (municipalities, coöperatives, and county governments) are managing their utility systems can be shown by the consolidated statement of the 106 units for the year ending June 30, 1940. The gross revenue was \$21,624,008. Their net income was \$4,023,001, after allowing \$2,177,149 for depreciation, \$2,034,269 for interest and amortized debt discount and expense, and in addition paying or providing for tax equivalents of \$1,638,389. (Taxes are paid by these public and semipublic distributors.)

Rates have been reduced both within and outside of the TVA service area. It has been estimated that \$9,000,000 annually is saved in reduction of out-of-pocket expense by the users of TVA-produced power.

## COMPARISON OF RESIDENTIAL RATES

Average Rate per KWH:

	1933	1937	1938	1939	1940
United States average . . . .	5.49	4.39	4.14	4.00	3.84
Alabama Power Company . . . .	4.62	2.97	2.85	2.76	2.70
TVA service area . . . . .	...	2.01	2.06	2.20	2.08

Consumption of electricity has increased. The region served prior to 1934 was about the United States average in electrical consumption; today it is 50 per cent above average.

## COMPARISON OF CONSUMPTION

Average Annual Consumption—KWH per Customer:

	1933	1937	1938	1939	1940
United States average . . . . .	595	793	853	897	952
Alabama Power Company . . . .	793	1289	1362	1413	1466
TVA service area . . . . .	...	1427	1359	1262	1425

The sociologist may look for other evidences of progress and there is little or much depending upon the approach and extent of investigation. Two farmers reported on a questionnaire: "Since we have had our electric brooder, we eat more chicken"; and "We use our refrigerator to make ice cream most every day." To them these results were definite and tangible.

*Problems.* With development and progress come new problems. The increase in size of the local distribution agencies has complicated the educational program. Several organizations have over 5,000 farm members and 800 to 1,000 miles of rural lines. General meetings of the members and house-to-house contacts cannot be utilized. Diversification of interests and conflicts within the organization are more likely to develop. Communities at the end of the line may be dissatisfied with the service being rendered and may desire relocation of the headquarters or desire a branch office in their immediate area.

Urban and rural points of view may clash on policy of line extensions or rate reductions. The haves and the have-nots (those having electricity and those not having it) may clash on minimum bill requirements. Electricity has not been used as extensively by the tenant farmers as by the farm owners, and yet the distributing agencies in the rural areas desire to serve those additional tenant homes. Should the distribution agency finance the wiring of those homes? Should the "ability to pay" be used as the basis for acceptance of the lower income group into membership or more favorable contracts? Is the job of rural electrification complete when 50, 60, 80, or 100 per cent of the farm population has electric service available?

The answers to these problems cannot be found in books, or even in research or investigation, but only from the opinions of the people in the area, who from their own experiences, information, and judgment must determine and formulate the policies of electrical distribution.

#### EDUCATION IN THE ADAPTATION OF THE VALLEY PEOPLE TO THE DEVELOPMENT AND USE OF NEW RECREATION RESOURCES

As with many newly discovered resources, the recreation value of the TVA lakes was not entirely evident to the residents of a region

hitherto lacking any comparable bodies of water. As custodian of the new resource, the TVA recognized its obligation, not to develop the resource and hand it to the people, not to dictate to the people how to develop it, but to stimulate by education, leadership, and example the appreciation of the people for the new resource and to play the role of adviser rather than director in its subsequent development.

*Preliminary surveys.* First stage of the Authority's program of making its lakes and shoreland available to the people for their enjoyment was exploration. Acting under Congressional mandate, as given in Section 22 of the TVA Act, to conduct surveys and demonstrations that would lead toward action by the citizens of the region to conserve and develop properly their natural resources, the Authority conducted a number of studies. Outstanding among the surveys were an inventory of the recreation assets of the Valley region and a survey of the economic opportunities that might be derived from optimum development of scenic and recreation resources. The findings of these over-all surveys were made available to the citizens of the region.

As each new lake in the TVA chain came into being, a thorough study was made of its recreation potentialities, and the findings of the study were released to State park divisions, planning boards, and other Government agencies concerned with the development of recreation in the reservoir areas. These general studies were followed by special studies of the possibilities of specific site development by local agencies.

*Demonstration techniques.* One of the most successful education techniques employed by the Authority in the field of recreation has been that of demonstration. In coöperation with other Federal agencies, demonstrations of recreation as a prudent form of land use were established and maintained on the reservoir-margin properties which the Authority had acquired in connection with its dam-construction programs. Vacation parks, day-outing parks, boat docks,

a scenic freeway, picnic areas, and group camps are among the various facilities constructed.

Millions of persons have seen these recreation demonstration projects. The first reaction of many people, to whom nonurban public recreation development was a relatively new concept, was one of curiosity. Then, they came to enjoy and to appreciate the parks. Finally, the demonstrations produced the desired stimulus: "Why can't we have a park like this over in our part of the State?" and "When the new TVA lake forms down where we live, is TVA going to build us a park like this?"

*Demonstration results.* Citizens of some of the Tennessee Valley States who visited the TVA demonstration parks in their earliest years found that among the reasons they did not have a similar park was that there was no branch of their State government with the authority to construct and operate parks. The remedy for this was to get the State legislature to establish such an agency: a department of conservation. Today every State in the Tennessee Valley region has an active program for the provision of public recreation areas by a proper division of its State government. While it would be absurd to claim that TVA recreation demonstrations alone are responsible, it would be equally absurd to deny that they exercised a powerful influence.

Those citizens who wanted to know if TVA was going to build a park on the shores of a TVA lake in their region learned that the Authority would make suitable portions of its reservoir margins available for development by citizens and their governments, but could not undertake the development itself. Today on the shores of TVA lakes there are State, county, and municipal parks, YWCA and Boy Scout Camps, public boat docks built and operated by concessionaires. Among the State parks is one for Negroes, which when completed will be one of the largest and most extensively developed areas of its kind in the South. In the development of each of these areas, the Authority has offered technical assistance and advice, but responsibility for development, sponsorship, operation, and maintenance is being assumed by the local groups.

*Use of the water resource.* Education in the use of the new water resource is as important as education of the people to the opportunities of the resource. Toward this end the Authority has encouraged the formation of various organizations of users of TVA recreation properties. Two large pleasure-boat harbors are operated by the Authority as demonstrations, whereas more than thirty additional docks are operated by private citizens, under license from the Authority. To provide for the exchange of information and ideas on the ways of serving the public and on solving management problems, the Authority stimulated the formation of boat-dock operators' associations on TVA lakes. As with the local planning boards, the dock operators call on the Authority for assistance.

*Program planning.* An example of another type of citizen organization is found at the group camp at Pickwick Park, one of the TVA demonstration parks. The camp is in Tennessee but is also within a few miles of Alabama and Mississippi. The Authority assisted in the organization of a tri-State advisory council composed of representatives of groups interested in the use of the camp. The council coördinates and establishes priorities for use of the camp. As the council gains experience, it is expected to take an increasingly active part in the operation of the camp.

In many instances, existing organizations have assumed the responsibility of educating the people to the new recreation resource. For instance, TVA lakes form considerable hazard to inexperienced boaters and swimmers, especially in an area where water sports have been uncommon. Programs in water safety have been conducted by the Red Cross and local safety councils, with the coöperation of the Authority and the Coast Guard.

*Results.* Some of the results have been highly gratifying—some disappointing. By and large, the Authority feels that its efforts have been worth while. Best proof of this lies not in the number of new recreation developments, not in the heavy patronage of the developments, and not in the size of the recreation industry that has grown

up around the chain of lakes, but in the attitude of the people of the region toward the new resource.

In the early days of the Authority's program, little local enthusiasm for recreation use of a newly formed lake was manifest until after the lake had become a reality. Today, the announcement of the approval of a new reservoir project is the signal for the formation of local organizations whose objectives are to plan for full utilization of the coming recreation resource. In Kentucky, for example, citizens in the western part of the State are already drafting plans for a State park on Kentucky Lake—and Kentucky Lake will not be formed until 1944. Many a Tennessee Valley community has staged a regatta as part of ceremonies dedicating the new lake at its door; today the regatta and fish rodeo have taken their places alongside the county fair and the Fourth of July barbecue as annual events on the calendar of lakefront towns.

What used to be known as "the government's new dam" is now "our dam." The original "TVA lake" has become "our lake."

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*Carroll A. Towne* is a landscape architect, graduated from Massachusetts Agricultural College. He entered the TVA during its first summer and has become Chief of its Recreation and Public Grounds Division. He has the responsibility not only of planning TVA parks and construction camps but of working with State and local agencies to provide public recreation facilities and to stimulate their use. He works closely with the TVA Training Division in the use of recreation as an instrument of education. Mr. Towne's earlier experience included landscape architecture in Florida and Rhode Island.

*Philip W. Voltz* joined the TVA in 1938, before which he took part in a nation-wide survey of rural coöperatives by the Farm Credit Administration. He has had practical experience as an employee of several farmer coöperatives and as president of a Wisconsin consumer's coöperative, and as a statistician, loan adjuster, circulation promoter, and office manager. Mr. Voltz is a graduate in agricultural economics of the University of Wisconsin.



## THE ADAPTATION OF REGIONAL RESEARCH TO EDUCATIONAL USES

ELLIS F. HARTFORD AND MAURICE F. SEAY

Two recent trends may be observed in the current and sustained interest of educational leadership in curriculum reconstruction and in the relatively recent but rapid development of regional research. One trend is the recognition of the need for a truly functional curriculum. This recognition has resulted in significant programs for the improvement of instruction in all of the States of the Tennessee watershed. It is becoming clear that the solution of our regional-national problems depends upon an educational effort that will acquaint people with their resources in relationship to their problems. The other trend is the recognition of the necessity for research and technical skill in regional development. The regional school of social scientists, represented by Professor Howard W. Odum and associates at Chapel Hill, North Carolina, has done pioneer work in this field. During the past eight years the program of the Tennessee Valley Authority, with its multiple-purpose development of an important subregion of the Southeast, has given new impetus to regional thinking. As a result there is available to the whole region as well as to the Tennessee Valley a comprehensive and significant body of research.

### THE PROBLEM OF TRANSLATION

The present need in Southern education is for adequate translation of available findings into forms suitable for use in educational programs. Too often the findings of able specialists have been reported in technical language or have been hidden away in professional journals. Professor Harold F. Clark, writing in *Social Education* for October 1940, stated that valuable articles on economic problems in current professional journals were, to all practical purposes, written

in a "foreign language."<sup>1</sup> Reports of research, however valuable and significant, cannot play their part as potential curriculum materials if they are not easily available and if they are not readable. The situation is not unique in certain fields of study and is not confined to a single region—it is common to all departments in all regions of the nation. The solution of the problem involved is not simple; nor will it be permanent unless both educational and research specialists give continuous attention to the necessary collaboration of their efforts.

The Advisory Panel on Regional Materials of Instruction for the Tennessee Valley has been organized with the major purpose of assisting educational agencies in their attempt to develop functional curricula based upon the findings of research. The Panel is composed of representatives from universities of the Valley States and of the heads of certain research departments of the TVA. Thus is provided the opportunity for the collaboration of educators and research specialists with mutual benefits to the programs of all agencies and departments represented. The Panel was formally organized on September 29, 1939, and has found what is believed to be a significant method of bridging the gap between research findings and programs of action.<sup>2</sup>

There is evidence that an increasing collaboration between educational agencies and research specialists is taking place in the Tennessee Valley. Recently, an example of such collaboration occurred between the Department of Forestry Relations of the Tennessee Valley Authority and the Bureau of School Service of the University of Kentucky. The Department of Forestry Relations conducts studies on methods of land use to facilitate water control by combined use of tree crops and pastures on areas adjacent to reservoirs. Unless water control on the land is attained through readjusted farm practices, the best efforts of engineers and builders of dams can be nullified by siltation of the reservoirs from continued erosion of sloping lands. The Bureau of School Service of the University of Kentucky has undertaken an experiment in applied economics. This experiment is attempting to determine whether diet practices in two rural counties of Kentucky can be improved through the introduction in the school programs of specially written readers and other instructional mate-

<sup>1</sup> See Harold F. Clark, "Vitalizing Economic Education," *Social Education*, October 1940.

<sup>2</sup> Advisory Panel on Regional Materials of Instruction for the Tennessee Valley, *Statement of Purposes, Function, and Organization*, December 4, 1939.

rials dealing with the problem.<sup>3</sup> Series of readers and other teaching materials which deal with such topics as gardens, chickens, goats, and canning and preserving foods have been prepared by staff members of the Bureau. These readers are supplementing or replacing the usual fairy tales and stories of life in foreign countries. The teachers of the rural schools and the staff members of the experiment have studied the potentialities for securing a more adequate diet from the resources of the communities. One phase of their study was the question of using for food available tree crops—nuts, fruits, berries, etc. Through the Advisory Panel on Regional Materials of Instruction, the Department of Forestry Relations was requested to make available to the Bureau of School Service its findings on tree crops suitable for the area. The staff of that Department of the TVA is supplying, in simple nontechnical language, its findings to the Bureau of School Service. The Bureau will prepare a series of readers on tree crops, their care, harvesting and storage, methods of preparing foods from tree crops, etc., for use in the experimental schools.

The request had a further important bearing on the research and the studies of the Department of Forestry Relations. Emphasis had formerly been placed on the possibilities of tree crops for sale by the farmer. The Department is now planning to give increasing attention to possible use of tree crops for home consumption by the farm family. Thus is exemplified the mutual benefits to education and research agencies when opportunities for collaboration are utilized.

#### THE ROLE OF LOCAL AGENCIES

Local agencies have a large part to play in the educational use of regional research. Research, however valuable and close its relation to the lives and problems of the people, is ineffectual if it is hidden away on library shelves or is stored away in filing cabinets of regional agencies. The ultimate value of research rests with the degree and effectiveness of its use by local agencies. Research on regional resources, problems, and potentialities should be practical for com-

<sup>3</sup> See Maurice F. Seay and Harold F. Clark, *The School Curriculum and Economic Improvement* (A Progress Report of the First Year of an Experiment in Applied Economics). Bulletin of the Bureau of School Service, University of Kentucky, Lexington, Kentucky, September 1940.

munity uses. Local agencies of education, health, agricultural extension, library, social service, etc., should have the opportunity to participate in and to use the findings from such studies. A continuing interacting relationship is involved in this type of approach. The regional research agency reacts to the need, which can be best discovered or reported by the local agency. The part played by the local agency equips it to use and benefit from the research findings in its own program.

The recent development of a nontechnical booklet on "community planning" is an illustration of effective participation by local agencies in the development of materials for use in their educational programs. The Department of Regional Studies of the Tennessee Valley Authority has responsibility for providing "planning assistance" to communities affected by the creation of large reservoirs. Communities along the chain of lakes formed by the impounded Tennessee River have the important problem of relocating families, buildings, and public utilities. In some cases entire small communities have been forced to move to new locations. The adjustments which these communities have made have been directed by the local planning commissions. The Department of Regional Studies, through its Urban Community Relations Division, has answered numerous requests from the local planning commissions of Guntersville, Alabama; Soddy, Dayton, Lenoir City, Jefferson City, Louisville, and Knoxville, Tennessee; Murphy, North Carolina; and other towns, for assistance in meeting their problems. It was found, from the pooling of the experiences of the various commissions and the planning specialists of the Authority, that popular materials on the subject of "community planning" were needed. As a result, the Urban Community Relations Division, with the assistance of the Advisory Panel on Regional Materials of Instruction, prepared a booklet entitled *Communities for Living*. An experimental edition was used by the planning commissions of three communities in the work of interpreting their program to the general public. The booklet was also used by schools in nine communities where planning was recognized as a community problem. These uses provided a practical test of the booklet as a medium of instruction. Results of the test, in the form of suggestions and comments by teachers, were used in the final revision of the booklet. Thus, the ideas and experiences of special-

ists in community planning and the needs of local planning commissions were brought together in a publication that serves the purposes of the respective agencies.

#### THE NEED FOR COÖRDINATION

The necessary coördination of the efforts of regional and local agencies in the development and use of instructional materials is part of a general problem. Programs designed to improve the socio-economic conditions of a region or community necessarily utilize an educational approach. Too often the various programs are separate and unrelated in spite of the similarity of their objectives and the almost identical setting of their work. Useless and wasteful duplication of effort and facilities, even confusion or actual conflict, may result. The people whose needs the programs are designed to serve are likely to become apathetic and bewildered by the very multiplicity and complexity of the agencies. A community or region, for instance, has public-health units, recreation programs, agricultural extension and homemaking services, libraries, schools, and other public agencies, all of which carry on educational activities. Effective ways of coördinating these various efforts must be found if optimum benefits are to result. The TVA has consistently refrained from adding new and additional agencies to the pattern of regional and local services now serving the people. Instead, an effort has been made to stimulate and assist the agencies already at work on regional and community problems. The same principle has guided the development, adaptation, and use of regional research in educational programs.

Coördination of effort in the adaptation and use of regional materials in educational programs is achieved through coöperative relationships among the regional and local agencies involved. The Advisory Panel on Regional Materials of Instruction is a sort of "clearing house" for regional materials of instruction. Some members of the Panel are familiar with the materials of research in the various aspects of the regional program; the

others are connected with institutions which know the needs and problems in the field. Thus each meeting of the group provides a necessary exchange of information, a pooling of experience, and an opportunity for collaboration by research and educational specialists. The ways in which the necessary coördination of effort is secured may be illustrated by some examples.

Mention has already been made of the experiment in applied economics now being directed in two Kentucky counties by the Bureau of School Service of the University of Kentucky. The school systems of the counties are essential participants in the study. The Advisory Panel also has been an essential participant. The director of the experiment is the member of the Panel on Regional Materials of Instruction from the University of Kentucky and the executive secretary of the Panel serves as a member of the advisory committee for the experiment in applied economics. This situation not only provides opportunity for the exchange of ideas and for coördination of the agencies concerned with the study, but it furnishes a channel for planning and distributing materials. The Panel has served as a source of information, for the benefit of agencies in other States, concerning the developments and results of this and other significant experiments in the area. Meanwhile, the programs of such agencies have been able to give attention to other problems, and the usual duplication of effort has been avoided. A number of significant studies are being made in various States on different problems, instead of similar experiments upon the same subject. For example, in northern Alabama notable advances have been made in the use of materials related to malaria control, and in eastern Tennessee materials on community planning and water safety have been tested in educational programs. The findings and results of these efforts have been made available to all agencies and departments by the process of coördination.

#### THE ADAPTATION OF RESEARCH IN EDUCATIONAL INSTITUTIONS

Educators who visit the TVA are impressed by the degree to which the research materials and services of the Authority have been adapted and utilized in the educational institutions of the Valley. They invariably ask questions about the effect of the developments upon the program of teacher-education institutions. In most instances, it is readily recognized that the TVA cannot and should not



attempt to affect the programs of institutions. It is clear, however, that the Authority should be in a position to place its findings and the benefits of its experience at the disposal of institutions which train the potential leadership of the region. The Advisory Panel is a medium through which relationships are maintained between the Authority and such institutions. The Authority has no legal responsibility to prepare materials for teacher education or for other programs of professional preparation, but it does recognize an obligation to place its materials at the disposal of agencies and institutions which can use them effectively. The practical benefits to the Authority and to the institutions are obvious. The research of the Authority can be directed, in many instances, toward the problems and needs reported by the institutions, and the findings can be translated into form suitable for their use. The institutions are able to focus their program upon real needs and problems of the people and of the region and to gain experience in adapting fresh materials to use in their curricula.

The primary purpose of the Authority in coöperating with the Valley institutions through the Advisory Panel was to secure assistance in developing instructional materials for its own program for the training of employees. Representatives from educational institutions, through their participation in the Panel, provide advisory assistance. In turn, the Panel makes research materials of the Authority available to the institutions. This mutual exchange of service is a secondary but important purpose of the program of the Advisory Panel.<sup>4</sup>

At various times materials developed primarily for use of staff members and specialists in the Authority have come to the attention of the Panel. Manuals for use by extension workers who train leaders in rural electrification, materials on various phases of soil-erosion control work by CCC camps on TVA lands, and reports and studies on resources of the Tennessee Valley are illustrations of materials, originally prepared for use in the Authority, which have been requested and adapted to educational use by

<sup>4</sup> See articles by Ellis F. Hartford and Walter D. Cocking, "Regional Research Enriches the Curriculum," *The School Executive* (January 1941), and "Translating Regional Research Into Curriculum Materials," *Georgia Education Journal* (March 1941).

teacher-education institutions. Such materials have been supplied to a group of teachers at the University of Tennessee for adaptation into usable instructional materials. Another group of teachers at the University of Georgia prepared the final revision of the booklet, *Communities for Living*. The Advisory Panel provides assistance, through a committee of collaborating specialists and educators, in arranging for the publication of materials by one of the university presses of the area. Through this process the research of the Authority is directed toward practical ends, and the programs of educational institutions are enriched by the inclusion of materials dealing with actual life in the region.

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*Ellis F. Hartford* has been the executive secretary of the Advisory Panel on Regional Materials of Instruction in the Tennessee Valley since its formation in 1939. In *Our Common Mooring* (University of Georgia Press, 1941) Mr. Hartford expressed for the Panel the philosophy underlying its regional education purposes. This year he is on leave from the TVA to complete his doctorate at Harvard under a Rosenwald Fellowship. He spent nine years in Kentucky public-school administration, specializing in the social-studies curriculum. He was co-author during this period of *Citizenship Problems for Young Americans* (University Publishing Company, 1938). Mr. Hartford received his A.B. and A.M. degrees at the University of Kentucky and has done other graduate work at Harvard and the University of Illinois.

*Maurice F. Seay*, who formerly directed the TVA's training and education program, is now Director of the Bureau of School Service and Head of the Department of School Administration at the University of Kentucky. He received A.B. and A.M. degrees from Transylvania College in Lexington, Kentucky, in 1924 and 1926, respectively. He also did graduate work at the University of Kentucky and the University of Chicago. Prior to his appointment to the TVA staff in 1934, he was Dean of Union College at Barbourville, Kentucky. He went to the University of Kentucky in September 1937.

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NOTE. Those interested in any aspect of the Tennessee Valley program are invited to write to the Director of Public Information, TVA, Knoxville, Tennessee, for specialized bibliographies of publications and visual aids.

